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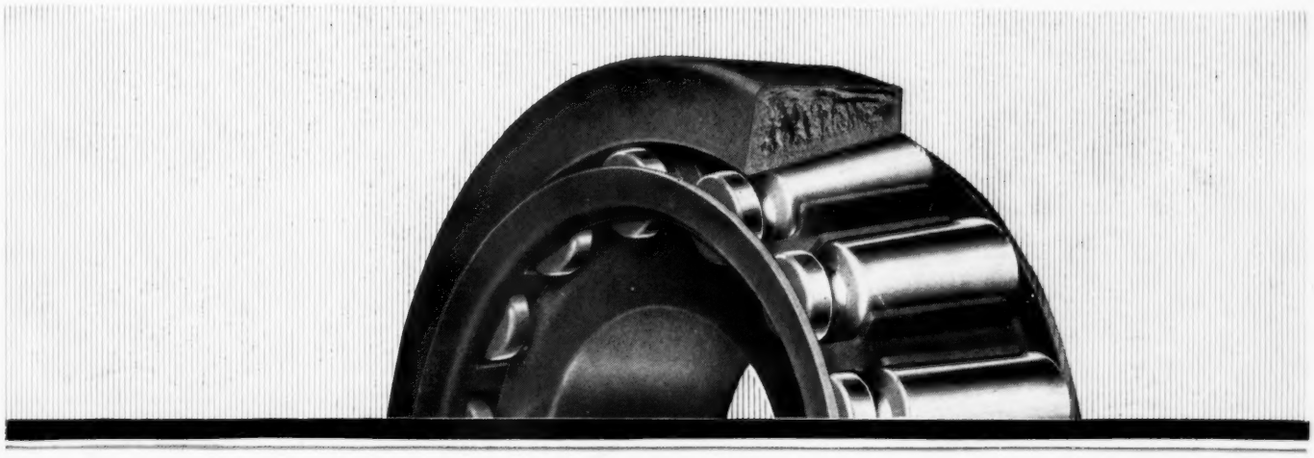

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Parts Makers Seek Larger Profits and Better Distribution

Two paramount problems considered at annual convention of M. & A. M. A. Feeling general that bigger returns are justified on volume of business done. Replacement market more important in future. Education and expansion of dealer organizations proposed.

By James Dalton

BUFFALO, Sept. 15—Better business for 1923 was the rallying cry of members of the Motor and Accessory Manufacturers' Association at their annual convention which closed here to-day. It is significant that to them better business does not necessarily mean increased production. They seem to think there might be such a thing as greater profit with a smaller output. Obviously that would mean a higher price per unit.

Parts makers are not worrying about orders. They have all they can take care of and some of them more. They say they are not worrying about how to make sales but how to make them with a margin of profit large enough to permit a reasonable return to the stockholders on their investment.

THIS article gives a comprehensive summary and a somewhat complete report of the more important features of the annual credit convention of the Motor and Accessory Manufacturers' Association held at Buffalo, Sept. 13, 14 and 15.

After one general session, the convention this year was divided into groups with programs taking up problems of peculiar interest to executives and credit managers, advertising managers, export managers and traffic managers.

In presenting its report of the convention, Automotive Industries gives first a summary which tells some of the things parts manufacturers are thinking about. It then takes up, in order, the credit, advertising, export and traffic meetings. An attempt is made, without going into too much detail, to outline the high points of each session.

It was evident that C. A. Dana, president of the Spicer Mfg. Corp. and its allied companies, struck a responsive chord when he said:

"We are selling on a very close basis to the automobile manufacturer and the automobile manufacturer is just taking our figures and adding them together into a simple cost and putting a certain profit on and passing it on to the public—and we are not the gainers. We are not getting a legitimate profit that warrants us in being in business in a great many instances."

He seemed to voice the thought of most of the parts makers present, and a good many of the leaders of that branch of the industry attended the convention.

Another sentiment of Dana which brought approv-

ing nods was that the parts makers are pretty much in a position to dictate how many motor vehicle manufacturers shall be in the field, especially in the truck division. He and others believe it can be done by the simple expedient of limiting credits to weak companies and refusing them to new concerns which can't demonstrate that there will be a real demand for their products.

IT is true that these views as to the present paucity of profits with a tremendous volume of sales were not voiced so much on the floor of the convention as in private conversations, but it is a vital theme for the parts makers. They are not getting "cocky" and they don't propose to attempt dictation to the vehicle builders, but they do feel that they have not profited as greatly as they should from the record breaking automotive business this year.

At the beginning of 1922 they had on hand large inventories and heavy stocks of partly fabricated materials which had been held up from the time the slump came in 1920. They were glad to get releases and new orders then on almost a cost basis, but these stocks have been worked off and they can see little to be gained by keeping their plants running night and day unless the earnings are commensurate with the activity.

It was asserted with pointed emphasis by more than one man that motor vehicle prices wouldn't go much lower and it was even more freely predicted that prices to the purchaser were likely to be higher a year from now. It was admitted that car and truck companies have been wise in stimulating sales by lower prices, but it is felt this process has gone far enough if not a bit too far.

In other words, the parts maker believes that if he increases the price of his product just enough to insure himself a little more profit and that increase is passed on to the public by adding $50 or $100 to the price of a car in the medium price class, it won't militate very seriously against the sale of automobiles.

Next to profits, the parts manufacturer is interested chiefly in distribution problems and means of widening his market. The replacement market for parts has become a burning issue. For that reason these men are almost as much concerned as the motor car dealer or manufacturer in arriving at a sane solution of the used car question if there is such a thing as a sane solution.

Trading in used cars at exorbitant prices has cut a big hole in the replacement parts market, they contend. They sympathize with the dealer and they assert without equivocation that the vehicle maker is partly to blame because he is constantly forcing the market for new products.

As a consequence, they feel, the dealer pays so much for used cars, in order to make as many sales as possible of new ones, that he can't afford to have them reconditioned properly before he re-sells them. He simply polishes them up a bit, it is contended, and then exaggerates somewhat on the statement that they have been "re-conditioned." Frequently the buyer pays so large a price that he can't afford to buy replacement parts, either.

This replacement market is becoming more important every year and many parts makers are beginning to feel that there soon will be as much profit for them in its cultivation as in centering their efforts on sales to the car builders.

It is because of the replacement market, for one thing, that the dealer has become a person of vital importance. A good many parts makers do not think highly of the policy of restricting dealerships. To the contrary, they are inclined to believe the dealer organization should be enlarged. One of the chief difficulties is that there are not enough dealers to go round.

These problems are as common to makers of engines and frames and gears as they are to the makers of batteries and lubricants. They are all wondering how they can put more pep in their dealers, how they can teach them what they ought to know about the products they sell and how they can put over intensive sales campaigns. They feel they are not getting as much business as they should, either in the big towns or the little ones.

There is a dearth of dealers of the right type in the parts field just as there is in the fields of cars and trucks. Much thought is being given to educational campaigns, not only to teach the dealer what he must know to talk intelligently about his merchandise but to teach the principles of merchandising.

The parts maker is not concerned exclusively with the manufacturer and the retailer. He proposes to cultivate the jobber more carefully in future. Most of them believe the jobber is an important link in the chain of distribution and that practical assistance should be given in "ask 'em to buy" efforts.

Taken all in all, the parts men propose to expand their markets through every possible avenue. There is becoming apparent, also, a spirit of greater independence. None of them proposes to affront the vehicle manufacturers gratuitously, but they evidently think they will be justified in asserting themselves along legitimate lines, both as to prices and to the markets for their products.

There was considerable divergence of opinion on the subject of mergers. It seems to be generally accepted that the next few years will bring consolidations just as there have been in the iron and steel industry to effect greater economies of production and distribution.

SOME of the men at the convention are in favor of mergers, but it is probable a majority of them don't want too many. They admit that there are too many weak concerns making trucks and perhaps a few too many turning out passenger cars, but they feel that in the last analysis the public will determine the future of the automotive industry and that the prospective purchaser of a motor vehicle wants to make his selection from a wide field of models.

The atmosphere of the convention this year was much

TWO vital problems which are being given close consideration at this time by parts and accessory manufacturers are:

How to earn greater profits.

How to insure broader and better distribution.

They believe they are not getting a large enough return on the volume of business they are doing and it is certain that the trend of parts prices will be upward.

Distribution questions center closely around the dealer. Most of them favor expansion of dealer organizations. They look upon the replacement market as a highly profitable field in future.

less rarefied than it was at Detroit last year or at Cleveland the year before. In 1920 the parts maker was hanging on with grim determination, feeling that he was holding the bag for the entire industry, but with a wholesouled resolve to make the best of a bad situation. It is to his everlasting credit that he did it so well. He came through without whimpering, staggering under his load, but with a deep faith in the sound future of the motor vehicle.

But for his generous extension of credit, even when he didn't know where his next dollar was coming from, many a passenger car and truck company now doing a good business would have fallen by the wayside. For that reason there was an atmosphere of profound gravity at the convention in 1920 and questions peculiar to a period of deep depression were the ones given closest attention.

AT Detroit last September many of the clouds had rolled away and it was evident that the worst was over, but many difficult problems lay ahead. There was less of gravity and more of confidence. The atmosphere was one of sane optimism.

This year there was no pressing financial problem to consider except the one of profits. There was no question of keeping the wolf from the door. There are not so many past due accounts on the books and not so many credit men are playing a daily game of solitaire with a sheaf of notes wondering if any of the makers will, by a miracle, fail to ask for a renewal.

The present has become of less concern than the future. The men at the convention are trying, for the first time in two years, to look a few months ahead and make their business something more than a day-to-day affair. The atmosphere might be characterized as one of self-confidence.

Telegrams were read at the convention from some of the leaders in the motor vehicle field predicting a record breaking business in 1923. These wires, with their messages of cheer, were greeted with applause, but there was apparent an undercurrent of something approaching skepticism.

There is no fear in the heart of the parts maker that next year will bring anything in the nature of a slump in business, but he doesn't see how 1923 can bring any great increase in the sale of motor cars. He admits that the business done this year has been almost unbelievable and he will concede that he has been cautious so long caution may have become a fixed habit. But some of them will point out that the automotive industry has leaped far ahead of other lines of trade and that it isn't economically possible for it to go on leaping without waiting for the rest of the country to catch up.

A good many of these men feel that the automotive industry is approaching an era of stabilization and that there are not likely to be so many sensational spurts. They believe absorption of motor vehicles has reached a point where it will be governed more rigidly in future by the increase in wealth and population. Some of them are inclined to think that the sale of used cars will be less of a problem in 1923 and that the demand for new ones will not be quite so insatiable.

Summarizing the views of these skeptics, if they can be called that, it would not be an unalloyed misfortune if a good many more motor vehicles were driven until they were fit only for the junk pile instead of being traded and re-traded with a new car or at least a little used car being sold with every trade and re-trade. They argue that the demands of a stable replacement market would more than offset any diminution in orders from manufacturers and that all branches of the industry might profit if it could approximate its business somewhat accurately each year and make its plans accordingly.

Parts makers generally don't propose to get tangled up in any ill advised program of plant expansion. They believe it will be more profitable to operate their factories 24 hours a day, if necessary, and make them more efficient by installing better production machinery and methods. They think the passenger car builders will be making a mistake if they accept the tremendous business of 1922 as a barometer of what's going to happen every year in future. They believe that if there were a famine of cars at certain periods of the year for awhile it wouldn't be a bad thing and that it might tend to distribute sales more evenly over the entire year.

Because of the change in the general business situation, the convention this year was not devoted to so great an extent to credit conditions. Sessions were held by four different divisions—credit managers, advertising managers, export managers and traffic managers. Strangely enough, the fundamental ideas developed by the speakers before all these groups bore a marked similarity, although it might be supposed the problems of the men addressed would differ greatly. The most vital problems to all of them were:

How to earn greater profits.

How to insure broader and better distribution.

Profits, 1923 Business, and Used Cars Are Topics in Credit Session

Dana discusses financial and economic questions. Rukeyser, Reeves, and others talk on current problems

FIVE addresses of deep interest to executives and credit managers of parts companies were made at the sessions of the general credit convention. They were:

"Integration and Mergers in the Automotive Industry," by C. A. Dana, president of the Spicer Mfg. Co.

"The Financial Outlook and an Outside View of the Automotive Industry," by Merryle S. Rukeyser, financial and business editor of the *New York Tribune*.

"Trends of the Industry and the Outlook for 1923," by Alfred Reeves, general manager of the National Automobile Chamber of Commerce.

"Credit Conditions as I See Them from the Standpoint of the Credit Grading Committee," by R. E. Hayslett, treasurer of the Hydraulic Steel Co., Cleveland.

"Advantages of Cultivating the Jobbers' Trade," by T. E. Challenger, credit manager of the McCord Mfg. Co., Detroit.

EZRA W. CLARK of the Clark Equipment Co., in his opening address as chairman of the Advertising Managers Council, sketched briefly bus development in new fields. He said the increased use of motor vehicles by country merchants is cutting heavily into the business of mail order houses. He also referred to the rapid strides which are being made by motorized grocery stores in the rural sections.

AFTER sketching the reasons for the deflation which followed the war, with the tremendous shrinkage in inventory values, Dana said in part:

"Those tremendous depletions had to be taken out of either the undivided profits of the company, the surplus or through a sale of some form of investment or securities. The result is that many companies have not sufficient working capital. It may be due somewhat to lack of sales experience. More attention should be given both by truck and passenger car manufacturers to better sales, more permanent sales, better distribution of both cars and trucks. It may have been caused somewhat by a greater quantity of different name plates of passenger cars or trucks than there is a demand for. It may have been caused by bad judgment. But the fact remains that to-day there is a lack of working capital.

"We who sell to those various accounts have to decide as to what we are going to do with them, because we are in the position of the owners of those businesses. I am speaking very frankly about this because I think it is a serious matter that we, who are in the parts branch of the industry, are the owners of a great many of the truck and passenger car manufacturers even though we do not have the shares of stock in our names.

"We should recognize that so that we may lend every endeavor that we have and every thought that we have and all our experience to help to show them how they should sell, to help show them how they should finance their immediate requirements in order to liquidate some inventory that they already have on hand. We should show them how they may operate at lower costs and with a reduced labor cost, and how they, perhaps, should change their design so that the article that we are contributing to may be merchantable and more salable.

"That has led us to the creditors committee which was not known some time ago. They used to go into receiverships."

Reorganizations

Dana then outlined the methods by which these companies are liquidated, with as much salvage as possible, or are reorganized by the issuance of new securities to provide additional working capital. He warned that after gold notes or gold bonds are sold in these reorganizations, merchandise creditors become junior creditors. The success of a company which has issued these bonds or notes should be followed very carefully so that unduly large credits will not be extended. Coming to the subject of mergers, he said:

"There are two necessities for mergers. One is a financial necessity, in which one company needs the support of another company that is better financed, or they will secure financial assistance by making the proposition larger so that the securities are more marketable.

"I know of one automobile group in this country now in which the several companies were too small to warrant the financing of a sufficiently large amount of securities to support each of them, and consequently they blended together under one corporate entity so that that corporation would be able to issue a larger block of bonds which they could sell at less discount and which would be more readily marketable, and by means of having the greater marketing, they are going to get their money at a lower rate of interest and are going to be able to sell the bonds that they couldn't have done as individual entities. That would help all you gentlemen who are creditors of those several companies, because by means of that new money that comes in, even though it is a recorded obligation, it will help, and practically all of you, I know, are creditors with some of these companies. It will help you in getting a greater percentage of your claims paid eventually by continuing those companies, by means of this new money that is secured by this larger funded bonded obligation.

"That is the type of merger that is founded from financial necessity. The other type of merger is the one that is founded from economic necessity, such as the Steel Corporation, or to the Consolidated Coal Company, or the American Radiator Company, or the Bethlehem and Lackawanna Steel merger. It was their economic necessity to have a corporation large enough to not only finance their ore digging, the transportation of the ore, but the manufacture of either the billet, the ingot or the pig iron, and then the shipping of that to the finishing processes of the various classes of steel that you and I use in our industry.

"I have not been able to see the instance where there is a success in a merger that has been made for economic benefit where it has all been centralized in one administrative head. That policy was exemplified by Judge Gary when he formed and created the Steel Corporation by the merger of the various steel industries throughout the country. He showed great wisdom in perfecting this enormous industry which in each of its entities is strong and aggressive, and no particular one is pulling the other one along as a lame duck.

Limitations of Mergers

"Each plant manager is able to handle his own production, his own manufacturing in his own mine, and it is only where the sales of the one article are provided for that there is a centralization of organization.

"As I look into the automobile industry, I think you will find that the same rule prevails. The largest entity in the automobile industry I think is distinguished with us for the success of individual plants, and without mentioning names, we look to the various plants of the largest automobile manufacturer, and we attribute the success of the cars that any one of the members of that organization make, to the officers and the organization of that company, and as I see the workings of the minds of those who are conducting the business of this large industry, they are trying to encourage that more and more.

"The reason is because they are manufacturing different articles. An eight-cylinder car is not the same thing and doesn't meet the pocket book of the same class of person as a four or six-cylinder car and is made for a different purpose. Consequently the salesmen have to be trained in a different line and the manufacture of the various parts that go into them are either better or have not the finish on them, according to the price that they are expected to sell for.

"I would like to say this in regard to the general policy of parts manufacturers. I meet a good many, I see a good many balance sheets, I see a good many earnings statements, I see a good many costs that are submitted to various plants at different times, and it seems to me that in the parts industry to-day we are contributing too much to the public. We are selling on a very, very close basis

to the automobile manufacturer and the automobile manufacturer is just taking our figures and adding them together into a simple cost and putting a certain profit on and passing it to the public—and we are not the gainer, we are not getting a legitimate profit that warrants us being in business in a great many instances.

"I think the principle is wrong. You should increase production by reducing your costs, by lowering your labor, overhead or material cost, but at the same time to get a living wage is proper. The seventy-one per cent of the cars that are turned out here in the United States that sell for a thousand dollars and less that we have created here in the last few years are the mainstay of the automobile industry. Although they are only made by five companies, at the same time in trying to produce that quantity production, we should arrange our material, labor and burden costs in such a way that we can get a living.

Competition Keen

"It has appeared to me that in a great many instances the competition is too keen, that in trying to get the public to buy cars we pass something on to the public that they don't appreciate, that the saving they make in the purchase of that car which we should get for the benefit of the capital that is invested in our business is passed on to the owner of the car, so he spends it on paint for his house or on something else. He buys cars on a comparative basis. If all of those cars that are sold, we'll say in the thousand dollar class, had twenty-five dollars more added to them, so that it was on a comparative basis, I think there would be almost as many cars. I mean adding a small amount more of margin of profit. There is not enough being made by the industry to-day.

"The result is that many small companies who produce a small number of cars are not able to make the profits that they should in comparison with those who turn out larger quantities of cars.

"I believe with some of the speakers here that we should try to encourage a diversification of different types and classes of cars to a certain extent. We are the ones who create those customers. I know I speak for many here who know that the parts that they submit and that are assembled in those cars make those cars, and those companies that they submit those parts to have not the money to pay for them, but they are continued in existence because we give them either trade acceptances or notes, or deferred payments, until they in turn cancel either the trucks or cars that we have furnished the parts for.

"We are making those companies, and the thought has come up in my mind many times as to whether we are not creating too many of these companies so that we are weakening the credits that we should have from other companies that are really stronger, by creating competition against those companies that would give us more prompt payment and better credits.

Companies and Capital

"I don't think the future of our industry is going to be to try to encourage the greatest number of truck companies possible in the United States, or the greatest quantity of passenger car companies in the United States. It is to try to have a reasonable number of good companies that can pay their bills, that have some money left in the bank, that are a credit and a going concern risk to both the public, the bankers and to the officers that manage them.

"If our companies do not make money for the capital invested in them, we are criticized not only by the banks, but we are refused by bankers who would underwrite further the opportunity of gaining more money, so as to extend our business and maybe perfect our business. In order to live, and to live on a sound basis, we have got to make money because dollars and cents and money is the reward and is the medal of success, and either the banker, the possible share holder, buyer of bonds or whoever it may be, measures the success of the company entirely by the profits that they make, and the stock values and the other values are rated accordingly, and consequently I would like to support what one speaker said here, that we should not give our goods away.

"We are perhaps through the period of liquidation where we were trying to get rid of an excess of material in which we had to encourage people to take it off our hands in order to turn over our stocks; we are past that period, but we should get into a condition where we will only supply goods at a reasonable profit, not an abnormal profit, but a profit of which our shareholders, our bankers and ourselves, in the operation of our organization, will be very proud."

M. L. HEMINWAY, general manager of the association, in a review of the problems and service of the organization, said it had been suggested that the present is an opportune time to seek the repeal of Federal excise taxes on automotive products. He added that the association was closely in touch with the situation and that it viewed sympathetically the work of other organizations against longer continuance of a war impost in times of peace.

Small Profits and Quick Turnover Needed in Used Car Handling

THE address of Reeves, as the representative of the vehicle manufacturers, aroused unusual interest. He was asked numerous questions, especially in respect to the used car situation, which he said would be worse this fall. There is no cure for the evil, he declared, but many helpful remedies can be suggested. The best is for the dealer not to pay more for cars in trading than he can sell them for. The secret of success in handling used cars is "small profits and a quick turnover." No dealers' association can control the prices of used cars, he said, and he added that trucks should be used until they wear out and that no dealer ever should trade in them.

"Better service is needed," Reeves stated. "We need 100,000 mechanics right now. Poor service is the worst indictment a car can have. Too few people buy the same car a second time because of poor service."

Referring to the truck field, he asserted that many have been sold which were entirely unsuited to the needs of the customer and that as a consequence there has been overloading which will be stopped when more states pass laws similar to those in force in Connecticut.

"The present prosperity in the automobile business means employment for 2,250,000 people," Reeves said.

"In addition to the 200,000 men working in the automobile plants, to the hundreds of thousands of professional chauffeurs and drivers and of retail garage employees, there are about 250,000 accessory factory workers, 150,000 tire dealers and salesmen and thousands more in allied retail trades.

"One can realize also the effect on other industries by the fact that 22 per cent of the aluminum supply, 4 per

cent of the annual production of iron and steel, 20 per cent of tin, 16 per cent of the copper output and 30 per cent of plate glass manufacture are used in the making of motor cars and motor trucks.

"This effect of the public demand for increased modern transportation naturally is a very prompt stimulus to the business of those factories making parts and accessories. Sales for the past four months have been the largest for any similar period on record due to the keen competition on the part of manufacturers, each endeavoring to get a large amount of business by giving the most value for the money. In fact, more value for the money is being given to-day in motor vehicles than any previous time in the business.

"This is reflected in the accessory market by the increase in the equipment and appointments supplied with the finished product and the creation of a public desire to get the last word in motor improvement.

"This year's production should exceed 2,000,000 cars and trucks. I believe it is safe to say that next year, with export demands increasing, more than 2,250,000 motor vehicles will be sold.

"In this year's production about 10 per cent are trucks, but the truck production will keep on increasing as general business gets better.

"Of the cars produced this year probably 70 per cent will sell at $1,000 or less.

"I have been asked to say something regarding the future of the accessory business. One can only outline general principles and not predict in detail.

"Parts and accessory makers may look for business even better than they are doing this year. But I believe there are additional possibilities open to those firms which can develop new and useful devices.

"This is fully as true of the foreign field as the American. In fact, in some countries such as Argentina where owners will sometimes use several types of horns on one car.

"Aside from the fact that the public is an intelligent judge of motor products, and hence has an interest in improvements as they come along, there is a potential accessory demand in the fact of the great numbers of low priced cars which are being manufactured. The man who buys a low priced car and finds that he would like some particular added feature on it usually feels that he has bought his car at such a low price that he can afford to pay for minor improvements."

Urges Using the Jobber to Increase Parts Sales

CHALLENGER said, in reference to the jobber:

Broadly speaking, I believe the parts makers for whose product there exists any considerable volume of business, is losing a considerable and legitimate profit by confining his sales for service purposes, exclusively to the manufacturers to whom his product is supplied for equipment purposes.

Of the various channels of distribution to the retail trade, I think that only the manufacturer, with a huge volume of business, is justified either in establishing his own branches or in selling direct to the retail trade.

The exclusive distributor plan, perhaps, has some unique advantage but usually results in restricted sale and, consequently, restricted service to the vehicle owner, and has undesirable reactions in several directions.

Therefore, for the vast majority of parts manufacturers, for whose product there exists a reasonably large volume of business, I believe the well organized, established and financed automotive equipment jobber offers the most economical, most substantial and most profitable method of distribution.

I might add that at present there are in the United States and Canada automotive jobbers—and generally recognized as such—to the number of about 1700.

It is also a fact that the jobber's business has increased rapidly in spite of the fact that some items like tires and lubricants are now handled in the main by manufacturers' branch houses or through specialty distributors.

The demand for replacement parts, such as spark plugs, gaskets, brake linings, fan belts, piston rings and other items too numerous to mention, provides a large and profitable business for the jobbing trade.

In addition to this the possibilities for special accessories, such as bumpers, shock absorbers, motometers, mirrors and other similar items, including shop equipment, have provided an additional field in which the jobber has, naturally and logically, become the dominant channel of distribution.

Just now jobbers throughout the country are engaged in an active campaign toward better merchandising. The "Ask 'em to Buy" and "Ask 'em to Repair" campaigns are being conducted largely through the jobbers and are making better merchants of the supply dealers, and this also applies to the garage and repairman, all to the ultimate benefit of the accessory manufacturer. These campaigns also have been of very great benefit to the jobbers' sales organizations.

Another of the results is that dealers are tying themselves more closely to the jobber, who is teaching them better and more productive merchandising methods.

These and similar campaigns, and other good stimulants, mean more efficient jobber distribution, increased business and more substantial accounts for the manufacturers.

Good Dealers Essential

One of the vitally important questions with us is that of the potential business in a given territory and how we are to secure it, or reap the maximum harvest from what we may want to, or do, sow.

Can we secure our just due more directly and economically and without the aid of organizations, meaning, too, organized efforts, and without acquaintance among the many thousands of dealers and others who are in last contact with the consumer?

We might, in a degree, but it would require a mighty organization to properly cover the ground and a mighty expensive one, as well as the other, and many elements that would enter into such an undertaking. Even then, we would be under the handicap of being, comparatively speaking, strangers in strange lands, and along with the rest of it we would in fact be jobbers as well as manufacturers. I believe we can not be both and do the job, or both jobs, right.

In my judgment, there is where the jobber actually, necessarily and economically fits in.

If these arguments for the jobber are meritorious, then the manufacturer, to secure full advantage of his present or contemplated relations with him, must look well to his sales policy, as in cultivating and developing the jobber's trade this feature is most essential to such up-building and permanency.

Another important feature to be considered is that while literally the function of the jobber is to warehouse merchandise for which there is a demand, yet the demand must, in part at least, be created by the manufacturer, certainly developed by him, through sales helps and various forms of advertising too numerous to mention.

While, naturally, we would like to have the jobber push our individual line and to a limited extent, accomplish this

through advertising helps and other co-operation, yet, on the whole and due to the wide range of merchandise stocked, the jobber obviously cannot give any particular line much preferential attention, except upon occasions.

He stocks all the lines and supplies the demand the manufacturer creates.

I believe we should make him in a way part of our organizations. He is performing a service for us that is of great importance and value in the development of our businesses.

Conservatism in Plant Expansion Urged by Financial Editor

RUKEYSER pointed out to his hearers that industrial conditions have not become thoroughly stabilized although great progress has been made in the recovery from depression. He warned, however, against the temptation to further expand factory space at a time when a secondary period of inflation has just begun, asserting that it would be wiser to wait until indisputable evidence had been given that it will be possible permanently to do a greater volume of business than present facilities permit. He said in part:

"It is high time to escape from the economic psychology of war. While the nation was mobilized for a single purpose of co-operating in the defeat of Germany, the essential character of every economic thing was tested by its effect on gaining the nation's immediate objective. Pleasure cars, during the emergency, were more or less taboo. But the emergency is over and the taboo should be forgotten.

"Railroad executives are not unmindful of the expanding possibilities for competition from motor trucks and are seriously discussing the means of meeting the new situation.

"I think it would be futile for railway executives to seek to combat the motor truck. It is an instrument for usefulness whose worth is being increasingly recognized. It can be made to facilitate transportation over steam railway lines by taking over short hauls and by relieving congestion at necks of bottles, such as New York.

"Incidentally, the comparative lack of regulation suggests one of the main assets of the automotive industry. It has successfully kept itself out of national politics. Being newer, it has grown up in a different spirit from that prevailing some ninety years ago, when the pioneers of railway transportation first laid their plans. The leaders of the automobile industry understood that their profit lay in serving the farmer, for example, not antagonizing him.

"There is no political capital in swatting the automobile industry, as there has been in restricting the field of free endeavor for railroad men. The automobile industry would lose its favored position if competition should be followed up closely and if public service faltered.

"Unlike many of the older industries, the automotive is one of progressivism. There are no conservative leaders, in the sense of the precedent hounds. It is necessarily an industry of drastic change and incessant experimentation. The goad of competition is perpetually driving the pilots of the industry to discover means of more efficient use of fuels, greater simplicity of design, and heightened comfort for passengers.

"As for the outlook, next year's automobile business ought to be satisfactory. In all respects but one, the factors which can be foreseen, must be placed on the asset side. The one exception is the fact that part of the 1922 buying was due to the accumulated demand which had become pent up during the depression of the latter part of 1920 and of 1921.

"On the side of favorable influences, most of them can be expressed in the phrase—better general financial and industrial conditions. It does not take a fortune teller nor a sooth sayer to know that business is on the up-grade.

"Up to the present, the improvement, broadly speaking, has been principally in the physical volume of trade, in the increased employment of labor, in more or less stabilization of prices, and particularly in the complete disappearance of the panicky feeling which led men of business to do foolish and unnecessary things in the end of 1920.

"Despite these enormous gains, there has not yet been, broadly speaking, especially profitable business in most lines this year. The aftermath of depression has left the business world highly competitive, with many units fighting doggedly for trade, often at the expense of profits. This narrowing of the margin of profits will no doubt, in some of the less favored industries, result in a secondary wave of bankruptcies among the weaker and less efficient producers.

"Unless we are wise enough to escape wholly from the experiences of the past, after the prosperity will come a crisis and a depression. Serious setbacks two years or so hence can be obviated by those in control of business who remain aware of the traditional tendency of trade currents to ebb and flow.

"Business, especially one like the automotive industry, which depends on mass production, and upon the simultaneity of production of hundreds of parts makers, cannot thrive, of course, on hunches and intuitions. The decisions of modern business must be based on an unending flow of essential facts, and it is the business of my profession accurately and faithfully to supply them daily."

Reasons Given for Financial Difficulties in Automotive Industry

SIMPSON'S address was a graphic summary of the helpful work which can be done in rejuvenating and reorganizing companies in financial difficulties. He advised liberal extension of time to permit the working out of problems with a broad gage view of each case. Individual interests should not lead to a selfish attitude but the best interests of all creditors should be considered.

He cited the following causes as some of those which contributed to bring about the condition of acute distress in which so many passenger car and truck companies found themselves when they felt the full effect of the period of deflation:

Shortage of working capital in the beginning.
Large unbalanced inventories.
Departmental incompetence.
Heavy investment in fixed properties.
Expanded and high salaried office force.
Long term contracts for expensive and often useless advertising.
Poor and under-financed dealers' organization.
Inability to collect on receivables.
Heavy indebtedness to banks and trade creditors.
Indebtedness represented by high interest rate; commercial paper.
Burdensome fixed charges.
Overbuying. (Speculation).
Failure of dealers to pay for drafts, which had been discontinued by the company, and the charging of unpaid drafts back to company's account.
Lack of adequate accounting and cost system and knowledge of operating cost.
Failure to make provisions for taxes or set up proper reserves for contingencies.
Failure to develop bank lines.
Failure to co-operate and foster good will with sources of supply.
Inflated book values.
Quality and design of product.

"Sell the Dealer" Is Best Way to Reduce Advertising Costs

Undue importance has been given to influence of consumer advertising. Advertising managers discuss cost problems.

WHILE the Advertising Managers Council had on its program several topics pertinent to the main theme, "How Can We Get More Profitable Sales in the Automotive Industry at Less Advertising Cost," it was significant that when the advertising experts came to a round robin discussion on "My Best Bet for Getting More Return From the Advertising Dollar," it was the dealer to whom they turned their attention and who aroused their deepest interest.

In this discussion, which was led by S. E. Baldwin, advertising manager of the Willard Storage Battery Co., no panacea for solving dealer problems was offered but all the speakers gave evidence of earnest thought on the subject of dealer helps.

Baldwin declared the only way to sell the consumer successfully is by first selling the dealer thoroughly.

"He is the fellow we must think about and concentrate upon," Baldwin said. "Up to this time the industry has been coming up hill without any effort on its own part and we haven't had to sell. The time is near when we shall have to sell as we never sold before if we are going to move our products. We must get the dealer to work with us intelligently or we can't make good. We must sell the dealer our advertising with the purpose and reason back of it."

Harry Tipper, business manager of AUTOMOTIVE INDUSTRIES, asserted that undue importance had been attached to the direct acceptance of advertised products by the consumer. The average individual is not impressed by more than one one-hundredth of 1 per cent of the attempts made to reach him, he said. The great point is that attempts to advertise to the dealer have been much less effective than they should have been. This advertising, generally speaking, has not been sufficiently informative.

The point was made by Tipper that while dealers stock a great many lines, they sell comparatively few of them and concentrate on those things in which they believe personally. He said that the active flow of authority must be from the informed to the uninformed and not the reverse.

Tipper paid tribute to the men who sell automotive products at retail. He declared that considering the comparatively few years since quantity demand for these products became apparent the strength of the dealer organization which has been built up was little short of remarkable. While there are thousands of changes every year, no branch of the industry has become stabilized and the dealers are doing exceedingly well in view of the limited amount of educational effort which has been possible up to this time.

Attracting Dealer Interest

Alfred Reeves, general manager of the N. A. C. C., also paid tribute to the dealers of the industry. He said advertising must be designed in such a way that it will attract dealer interest. Automotive advertising copy is much better, in his opinion, than it was a few years ago and it is steadily improving. It must have news value if it is to appeal. Reeves asserted that considering the age of the industry and the growth it has attained, the dealers are a very wonderful lot of men. He pointed out that much of the advertising that has been done up to this time has been over the heads of many of the dealers and that it should be more or less elementary in character.

Baldwin explained that nothing was farther from his mind than criticism of dealers. They have done wonderful work but they need help in getting the most out of their work.

"The dealer needs all the help he can get," Baldwin said, "but so do all of us for that matter. We are facing problems we never met before and we must help each other as much as we can."

He advised advertising managers to go out and live with their dealers as much as possible, for only in this way can they learn how to give them the greatest help.

Too Many Superlatives

Harry Horning of the Waukesha Motor Co. expressed the view that automotive manufacturers are getting their message to dealers in an inefficient way. His chief complaint against automotive advertising is the number of meaningless adjectives and superlatives it includes. He cited Lincoln's Gettysburg address as a model of conciseness and effectiveness. Horning declared the character of the dealer is what sells goods. He is the one who must build up confidence in the products of the advertisers. Manufacturers would do well, in his opinion, to think vastly more of selling the dealer and much less of selling the consumer.

R. E. McKenzie, advertising manager of the Timken Roller Bearing Co., said he didn't believe the average owner of a motor car cared anything about the brand of bearings used in the car. The only reason for advertising to the public is as a means to an end and should not be designed exclusively for the sale of the product. He explained that it is necessary to sell engineers and selling them is made easier if they think the user knows about the products they are being asked to buy. He believes that it is necessary to have trade paper and consumer advertising go together to form a background for each other.

Ezra W. Clark, advertising manager of the Clark Equipment Co., Buchanan, Mich., and chairman of the executive committee of the Advertising Managers Council, who presided at the sessions, said that his company, after spending $100,000 in advertising automotive transportation, proposed to devote its campaign in the coming year chiefly to the statement that "Clark axles are good axles." He said no company gained by asserting that its products were far superior to those made by competitors and that it could get farther by telling the good qualities of its own goods without reference to others. He estimated that the $100,000 spent in advertising the industry had been worth $1,000,000 to the Clark Co.

"Charting the Future Markets of the Automotive Industry" was considered from somewhat different angles by Harry Tipper and C. A. Musselman, general manager of the Chilton Co. Tipper said:

Wide Market for Parts and Accessories

"THE basis of all calculations in connection with any industry is the economic position of all industry and the relation of the particular industry to that economic position. Upon this basis must be determined the present conditions and the tendencies of our particular industry with the aspects of its future possibilities. This again is divided into the groupings within the industry. For instance, the market for new products or the equipment market and the market for replacement. It must also be divided into groupings of the products in use and manufactured, such groupings being determined for automobiles and commercial vehicles by price classes more readily than in any other way. Within these various groupings the calculations may be carried further to show the competitive position of the different manufacturers within the group and in considering the particular problem of any manufacturer, they can be applied directly to his own policies.

"In considering the volume of parts and accessories of any type required, the probable future volume, the line of production development, and the line of registration constitute the bases for this consideration. In order to make the calculations, however, the rate of replacement must be determined, and this replacement rate can only be secured by field investigation as there are no reliable figures by which the rate of replacement on a given part can be secured from general statistics.

"The first period in the curve of the growth in any line of industry where a new product is being made is the period of experimentation, during which the product must prove its usefulness. This period is a period of slow development from the standpoint of volume and of intensive development from the standpoint of change in the product itself.

"Then there is the period of absorption during which the product is being absorbed into the social and business fabric. During this period the business tends to grow much more rapidly than the surrounding economic conditions would warrant under any other circumstances. It is a period of rapid development in volume and of much less rapid development in the character of the product.

"The third period is the period of adjustment, during which the product in its volume and character is being adjusted to the surrounding social and economic conditions. This is the period when the curve of development begins to flatten quite sharply as to volume and price changes, changes in character, and other adjustments in policy are frequent.

"Following the period of adjustment there is the period of stability when the growth of the business in volume is limited to the growth of population and wealth because it has become thoroughly adjusted to the surrounding economic requirements and cannot grow more rapidly than the business fabric or social fabric of which it has become a part.

"The automobile business is at present in a period of adjustment. The period of experimentation lasted until about 1910; the period of absorption until about 1920, and we have entered upon the period of adjustment.

"From these calculations, the curves of production and of registration have been arranged showing the probable future development of these in volume during the next few years. These curves are what is known as probability curves and they are much more accurate than the usual curves considered by commercial business because they are mathematically calculated in accordance with the understood law of directional flow and not merely indicative of the balanced areas of either volume or price.

"These statistics have been again divided to show the relation between this general curve of production and registration, and the various price groups within the industry. They are being carried further so that they will indicate the development in the various territories or geographical areas so that the registration in these areas would indicate the varying condition of the market in the particular territories.

"I have samples of two of these territories showing the registration curve in its relation to the population curve. In one of these territories the registration curve has arrived almost at a parallel direction to the population curve so that in this area the new registrations will be practically limited to the increase of population and wealth.

"In the other example, the direction of the registration curve is still much more sharply upward than the population curve, indicating that it will be some years before the market will be stabilized to the same point in this particular territory.

Analyzing Markets

"It is obvious that the future market in these territories represents the different potentialities from the standpoint of sales and from the standpoint of needed volume. The total volume of parts and accessories required is represented by the production volume in any given year on this curve plus the replacement needed for the vehicles in use, as shown by the registration curve. This volume, of course, varies tremendously in accordance with the rate of wear of the particular part of any accessory and consequently the actual replacement requirement.

"Investigation into the replacement is the most difficult part of this examination of the market because we have not yet arrived at the maximum requirement of service with the large portion of the volume of cars already in use and because there are no general statistics other than those we could gather ourselves by field work as to the rate of replacement for the particular part. It is necessary, therefore, for us to investigate in different sections of the country, the extent of sale required to service the cars in that particular area and from these investigations calculate the average requirement over the whole country for the number of cars in use. Of course, every investigation of that kind adds to the accumulative volume of information and corrects the previous investigation so that it represents a smaller degree of error in the general calculations."

Automobile Industry First in Production Value

"LET us realize that in America the great manufacturing enterprise in value of output is the automobile industry," Musselman said, "Many of us have been of the belief that the steel industry is the largest. Considerable research work through the Bureau of Foreign and Domestic Commerce, the Bureau of the Census and the Bureau of Mines at Washington, has resulted, however, in obtaining figures which conclusively place the automotive industry first and its allied industry, petroleum products, second, and it may surprise many to learn that iron and steel manufacturing ranks sixth. Agriculture has been excluded as farming can scarcely be classed as a manufacturing enterprise.

"The dollar value annually of America's ten leading manufacturing trades is as follows

Automotive Industry (cars, trucks, tires and replacement parts)	$2,865,000,000
Petroleum Products (45% automotive)	2,050,000,000
Slaughtering and Meat Packing	1,935,000,000
Foundry and Machine Shop Products	1,900,000,000
Lumber and Timber Products	1,675,000,000
Iron and Steel	1,650,000,000
Clothing	1,530,000,000

Flour Mill Products	1,275,000,000
Cotton Goods	1,250,000,000
Boots and Shoes	1,100,000,000

"Calculated sales of automotive products for 1922 have been divided into four classes:

Cars and Trucks	$1,490,000,000
Replacement Parts	550,000,000
Tires	675,000,000
Accessories	150,000,000
Total	$2,865,000,000

"If we add to the above figures the sum of $935,000,000 representing the value of gasoline and lubricants annually necessary to motor vehicle operation, we arrive at a grand total of nearly $4,000,000,000. And even this enormous sum does not include the cost of labor and administration.

"*We have now reached the turning point in the automobile industry.* We no longer look to new owners to obtain the greatest volume of sales. Until 1922 the majority of cars turned out by the factories went to new owners. This year the ratio has changed and for every two cars that go to new owners, three cars go to old customers to replace those which are scrapped. Carefully made calculations for 1922 show 825,000 motor vehicles for new owners, 1,200,000 for old customers. Of this great total of over 2,000,000 cars produced this year the division of passenger cars and trucks is as follows:

Passenger cars	1,800,000
Trucks	225,000

"It is now obvious that the majority of automobiles to be made hereafter will have to go to those who already are car owners but I, for one, feel the time will never come when new buyers will cease to demand motor cars in large numbers. Every year will bring its harvest—a new generation—a new army of buyers. Everything indicates a continued expansion. To realize this expectation, manufacturers of parts, tires and accessories will have to prepare for the waves of prosperity, as the incoming tide will surely flood those who do not build well for the future.

"For ten years the parts makers have been drawing their chief profits from sales to car manufacturers. Only five years ago—in 1917—five-sixths of the vehicles went to new car owners. Today the situation is entirely changed and the great market is the replacement field. The extent of this change as already accomplished, is shown by these comparative figures for 1917 and 1922 of *sales for replacement purposes:*

	1917	1922
Cars and Trucks	$279,022,000	$850,000,000
Replacement Parts	255,000,000	550,000,000
Tires (replacement)	390,000,000	650,000,000
Total	$924,022,000	$2,050,000,000

LACK of adequate parking space in cities has become a serious sales deterrent, in the opinion of E. P. Chalfant, president of the Gill Mfg. Co. He voiced the opinion that the parts manufacturers might well join with the other branches of the industry in attempting amelioration of the situation. The used car is an even bigger stumbling block in the way of sales, Chalfant believes.

"While the number of cars and trucks built in 1917 was nearly equal to the total to be turned out this year, the above figures show that sales of replacement parts to service stations have nearly doubled, during this same period.

"What better guide do we want in our efforts to approximate the character of market in 1923 than to figure the number of cars which have well passed their first efficiency and are ready to be rebuilt in whole or in part? And what greater assurance does the parts maker need to guarantee him satisfactory returns from the replacement field?

"With the continued increase in the use of automobiles it is apparent that the replacement market will represent a constantly growing proportion of the total market.

"What are you as parts makers doing to change your sales policies to meet these changing conditions? They are all in your favor if you will only take advantage of them.

Replacement Market Large

"The replacement market is the great opportunity of the present and the future. It offers:

(1) Greater volume.
(2) Greater profits.
(3) Greater independence.

"If we grant that replacement sales loom large on the horizon, then the dealer situation becomes of paramount importance to the manufacturer of parts and supplies for two very important reasons—first, the business of replacement sales cannot be concentrated in the hands of a few companies as is the case with the equipment business; second, the dealer and the service station are the dominating factors in the sales of replacement parts.

"The average amount of business per service station has grown steadily since 1919 from 142 to 177 cars per shop. This shows that the service station per unit offers a greater opportunity for the manufacturer and that, further, these shops are becoming larger and more substantial sources of outlet for the trade. Establishing yourself in the replacement field is a very definite form of life insurance for your enterprise. It's a market which always exists and one in which you can control your own business. To cater to this field requires a close contact between the manufacturer and the dealer and the initiative must come from you.

"Concentration of car and truck production in the hands of a small group of makers obviously endangers the parts and accessory maker whose chief business is factory equipment. Individual initiative and public demand are such potent factors in American life that I for one believe that no group of corporations will ever control the automotive industry. Combinations may have a great effect on the character of the supply and demand, and may divide the channels through which business runs and may result in companies adopting entirely new methods—but the big merger bugaboo has about as much reason for existence as the mythical 'point of saturation.'"

AUTOMOTIVE publicity from the viewpoint of the business paper and the newspaper, was taken up by James Dalton, editor of AUTOMOTIVE INDUSTRIES, and Walter Bermingham, automobile editor of the Chicago *Evening Post.*

Bermingham made a plea for truth and real news value in the material sent newspapers. He does not think that newspapers should eliminate the names of companies and individuals in their automobile pages for the reason that owners of motor cars always are more or less interested in the makers of them. He believes the function of the automotive publicity man is just as important to-day as it ever

was and that he will meet with just as much success if he confines his efforts to real news and sticks closely to the truth.

Both Bermingham and Dalton asserted that the signing of an advertising contract should not be used as a blackjack in an attempt to sandbag editors into giving space to publicity which is utterly worthless from a news viewpoint. The same position was taken by James E. Sullivan of the Boston *Globe* in a discussion of the papers.

Make Trade Paper Publicity Truthful and Informative

IN outlining the news needs of a business paper in the way of publicity and how publicity departments can help in this respect, Dalton said:

"More seems to be expected of trade journals in the printing of publicity which amounts merely to "puffs" than of newspapers. But as a matter of fact there is less excuse for using it. The function of a trade paper is to be informative. It never has space enough to carry all the informative material available for any single issue. Nothing should be printed in a business paper, except the editorials, which does not contain news or information. That applies just as much to a technical article as to a story on the formation of a new company.

"We are striving to keep our material up to the minute in freshness and I'm sure you want to help us to do it. Here are just a few suggestions as to the kind of material in which we would be interested so far as the parts branch of the industry is concerned:

Complete and technical descriptions of new products.
Descriptions of changes in old products.
Changes of personnel among executives.
Factory expansions or removals.
Reorganizations.
Consolidations.
Refinancing.
Financial statements.
Production figures.
Court decisions in patent litigation.

"Surely every plant can produce news falling within some one of these categories.

"Here are a few suggestions which, if they are followed, will make your publicity more welcome:

"In descriptions of new products or changes in old, let the facts speak for themselves. Don't make exaggerated or ridiculous claims for them.

Publicity "Don'ts"

"In the preparation of any kind of a story boil it down to the essential facts. Don't fill it full of meaningless adjectives and try to get half a column for what is worth half a stick on its new merits.

"Don't try to put over a story of no intrinsic merit on the strength of advertising contract.

"Don't take it for granted that an advertising agency is well equipped to turn out publicity which will be acceptable.

"Try to make your publicity absolutely truthful.

"Try to measure the value of your material by the amount of reader interest it contains.

"In sending out releases give the trade papers a square deal by giving copy to them far enough ahead of the newspapers so that they can at least get an even break in printing it.

"Try to remember that trade papers are all within the family and that when you give a story to them first it loses none of its news value for the newspapers.

"Try to think of the business paper as a friend who is constantly striving to serve you. When some trade paper representative calls on you don't treat him as you would a stranger or a casual visitor but try to realize that he wants to help you solve your problems and that he can't unless you are frank in telling him what those problems are. We can serve you better if we have rock bottom facts to work on and when you give us those facts it doesn't mean we are going to print all of them.

"Don't give us everything in confidence, however, promising to give us first crack at the story, then release it to the newspapers so we'll be a week late in printing it and then blame us if at some future time we make use of material we get without obtaining affidavits and permission from you after a few unhappy experiences of that kind. We always keep our promise about releases, frequently to our sorrow.

"Don't expect us to assume an attitude of watchful waiting so long that everything we print will be ancient history. We can serve you best by giving you advance information. You always are glad to get it when it concerns the other fellow and you ought to be willing to give up a little of it now and then when it concerns you.

"Try to keep in mind that there are certain kinds of publicity of deep interest to the business paper which are of no possible interest to the newspaper. Don't direct all your energies to obtaining publicity in newspapers. Remember that a considerable portion of it will be of more value to you in the business press. You always are willing to suit your convenience to that of the newspaper. Why not try some of the time suiting the convenience of your business paper?

"Keep it in mind that exceedingly valuable good will for your company and its products can be built up through business papers and business papers alone. They are addressed exclusively to potential purchasers and in them you don't waste any of your information.

"We will meet you more than half way. We will send one of our engineers any reasonable distance to get a technical description of a new product or a new process. We always are glad to pay tolls on news stories by telegraph. We don't expect you to do all the work. A new model or a new process is as important to us as a good murder is to a newspaper and we are willing to pay to get it."

A. R. ERSKINE, president of the Studebaker Corp., in a message of cheer to the convention, predicted that passenger car sales in the fourth quarter would fall off about 40 per cent, but that 1923 will be the greatest year the industry ever has known.

JOHN C. LONG, secretary of the educational department of the National Automobile Chamber of Commerce, speaking for Edward S. Jordan, who was unable to be present, said he believed advertising which created a desire in the mind of the person reading it, for the product advertised was more effective than that which was designed exclusively to emphasize the characteristics of the product. He expressed the view that copy for both vehicles and parts is steadily improving in quality.

Maurice Switzer, vice-president of the Kelly-Springfield Tire Co., asserted that the average advertising manager is not vested with sufficient authority to get the best results and that copy which is censored by executives who know nothing whatever of the psychology or technique of advertising loses most of its force.

Explains How to Cut the Cost of Advertising

CUTTING advertising costs through standardization of sizes and forms in selling literature was considered by J. C. McQuiston, manager of the publicity department of the Westinghouse Electric and Manufacturing Co.

"Almost every advertising man believes in the standardization of printed matter," McQuiston said. "What all are looking for is the standard or standards. That efficiency and economy will come from standardization there can be no question. How to get the standards is the problem that is to be solved." Giving his new idea of the solution, he said:

"You ask how these standards may be brought about. I suggest that the Advertising Council of the Motor and Accessory Manufacturers Association is one of the logical organizations to start definite work towards standardization. It seems to me if a small committee were appointed by the Advertising Council of the M.A.M.A. to work with representatives from other national organizations, particularly the Industrial Advertising Association, the Association of National Advertisers, the Society for Electrical Development, the Automobile Chamber of Commerce, the American Electric Railway Association, Paper Manufacturers Association, United Typothetæ and other organizations, to make a study of this situation, and make it acceptable to the various classes of industry, this would assure the support of such standards as would be adopted.

"I suggest that through the medium of the Associated Advertising Clubs, the Direct-Mail Advertising Association, the Association of National Advertisers, jointly or separately, we could bring about a conference on standardization of printed matter that would bring about some results—first getting standards and then working according to those standards. Such a conference should bring in:

> The electrical business, textile business, automobile business, railroads and railways, paper manufacturers, United Typothetæ, National Association of Purchasing Agents, and others.

"In this connection we should recognize the splendid work that is being done by paper manufacturers in bringing about a standardization of paper stock. They have gone a long way toward the realization of the goal I have in mind.

"Let us have a vision for the standardization of advertising matter. As the railroad, the telephone, the electric lamp, and the automobile have been standardized, so may we, the engineers and creators of advertising and printing, also bring about standardization in our work as a goal of efficiency, economy and service."

First M. A. M. A. Export Session Portends Greater Foreign Business

Dorman of Overseas Motor Service Corp. urges increased export activity. Other speakers outline ways and means.

THE export section of the Motor and Accessory Manufacturers' Association is a new departmentalized activity and consequently the export managers' meeting at Buffalo was the first conference of this character to be held at any of the annual meetings. With an increasing interest and trade in the export of unit equipment and accessories to other countries, the section may be expected to grow in importance, as its activities warrant. The Buffalo meeting was a good example of how it may be of service to those manufacturers who are desirous of building up an international commerce in their products.

The program of the conference was built up with the expectation that it would be attended by numerous company officials desirous of ascertaining how their companies might launch their export selling policies. With this in mind, the list of speakers and the topics under discussion were confined strictly to the automotive industry, this being almost an innovation in foreign trade meetings of this character.

Automotive exporters have had but few opportunities to listen to members of their own industry speak about the problems of the trade. The annual meetings of the Foreign Trade Council, such as have been held at Philadelphia, Cleveland and other cities in past years, have no specialized sessions of particular importance to the industry. The N. A. C. C. export meetings, usually held at the time of the New York show, have considered only passenger cars and trucks and consequently have not been of much value to the unit and parts makers, even should they have the opportunity of being in attendance.

The M. A. M. A. section on foreign trade, recognizing this lack, was organized last spring under the chairmanship of W. O. Rutherford, vice-president of the Goodrich organization, to promote the enlarging activities of its members in the international field.

Contact with the industry through a series of bulletins and informative letters has been obtained and the department has co-operated closely with the Automotive Division of the Bureau of Foreign and Domestic Commerce, at Washington, and with other agencies promoting overseas trade. This work, however, has been under way only a few months and is still in the process of development, but there is much to show that it should attain to goodly proportions.

There was indicated at the Buffalo meeting a feeling that the manufacturers both of unit equipment and of accessories have before them an increasing activity overseas. This was brought out by most of the speakers, particularly Gordon Lee, chief of the automotive division, who stated that a number of unit manufacturers had recently requested the assistance of the division in getting their overseas trade departments under way. With the curve of passenger car, truck and other automotive exports on a generous ascension, the importance of foreign development is being brought home to the various makers and Lee is of the belief that many of them will seek to organize foreign activities during the coming months.

S. W. Dorman, vice-president and general manager of the Overseas Motor Service Corp., of New York, acting chairman in the absence of Rutherford, took a strong position on the necessity of foreign effort. He advised that manufacturers should seriously consider foreign trading

activities. He instanced the growth of automotive jobbing companies in many countries, such as Australia, Cuba, Argentina, and others, and he declared that the American products were finding most favorable reception where they were being properly introduced.

He counseled that the manufacturers should quote their lowest terms to overseas buyers and he declared against a general policy of giving open territorial rights on all except a few highly specialized products. Selling through jobbers, or direct to the dealers, almost always worked out to the best advantage where exclusive arrangements had not been made. Furthermore, Dorman asked that manufacturers make every effort to ship their foreign orders without delay, instead of holding them up for weeks or months as was the case with some companies whose habit was to think of overseas trade as being merely an opportunity to dispose of some excess production. Dorman believes that foreign sales should take up a definite volume of production that will extend throughout the year and not merely when factories find sales in a lowered state at home.

Financing Shipments

Financing was one of the major subjects under discussion and here the export men heard it discussed from the standpoint of their own industry, rather than by bankers or general credit men who were not intimately acquainted with automotive conditions. One of the speakers on this subject was Glyn Davies, foreign manager of the General Motors Acceptance Corp., who is in charge of the financial end of the large overseas business now being done by the G. M. C. units. Davies considers the use of bankers' acceptances as the most workable means of financing export shipments and he stated that there should be close financial co-operation between manufacturers and the buyers. He does not believe that cash against documents in New York, the terms so frequently used by automotive manufacturers, can be maintained for any except a few products and, while he does not counsel that unrestrained credits be given, he stated that manufacturers should not require the earth from their buyers. Also, he does not consider it a part of the American manufacturer's task to finance time payment sales at retail in other countries.

The manufacturer may, perhaps should, finance the shipment to its destination—doing so by the use of acceptance credits or open credits in some cases, with a guarantee posted in advance to cover expenses should the shipment be refused—but time retail sales should be financed by the distributer or dealer. Another point particularly stressed was that manufacturers and dealers should not tie up their credit arrangements in such a way as to gamble in foreign exchange. Immediate covering by the dealer for his dollar needs was given by Davies as being the most satisfactory policy.

George F. Bauer, the foreign trade secretary of the National Automobile Chamber of Commerce, also discussed foreign financing, telling about the efforts the Chamber is making to arrange more favorable reception to automotive paper with the banks. This, if successful, would result in co-operative arrangements between manufacturers and banks, foreign shipments being financed as follows:

1. Dealer or overseas buyer posts a guarantee of 25 per cent.
2. Manufacturer discounts draft for 80 per cent of the face value, leaving other 20 per cent standing until transaction is completed.
3. Bank insures itself against credit risk and charges premium of about one per cent for six months to manufacturer.
4. Interest on credit extension is charged to the buyer.
5. Control of shipment, as collateral, is retained by bank until payment is effected.
6. Disposal of shipment, if rejected, is provided for in cooperative arrangement between bank and manufacturer, whereby latter contracts to give preference to returned goods in filling any export orders on the books.
7. Expense of returning any rejected shipment is amply provided in buyer's guarantee of 25 per cent, which is forfeited in event of rejection of the goods.

Gordon Lee outlined the work that the automotive division has under way and he related the efforts being made to obtain better statistical information concerning the monthly export shipments. The division is seeking a method by which the shipments of unit parts may be classified differently from those of accessories. At present, these two items are listed together and consequently there is no indication as to the totals of either. Manufacturers and export managers were requested to write to Washington insisting that some such separation be made, thus strengthening Lee's effort.

The packing and transportation problems that confront the industry were brought up for consideration by John F. Keely of the Transportation Division of the Bureau of Foreign and Domestic Commerce. First of all, Keely exploded the old theory that American manufacturers and exporters are unable to pack goods properly for overseas shipment. Great strides in this respect, he said, had been made in the last year or so and reports to the Bureau from its representatives throughout the world show that American shippers are now second to none in this respect. The boasted German packing is not up to pre-war standards and it likewise is far from being equal to that of the American shippers, Keely declared.

Chairman Dorman, in discussing the subject, told of a company that had been fined $129 in a foreign port because in marking the shipment a mistake was made of listing the weight at 53 instead of 43 kilos. He also advised that patent strapping would seldom be successful unless it were nailed down. If broken at one place, he said, all of the strapping would be lost but, if nailed, this would not be the case.

Another speaker was George E. Quisenberry, managing editor of *El Automovil Americano*. who discussed the growing trade in automotive equipment and the development that might be expected.

Bright Future Assured

"We can well look forward to the next twelve months as being bright with promise so far as the international field is concerned," he said. "The hold-over stocks of automotive equipment, practically everywhere, have been completely liquidated. New buying has begun, the financial and business depression is passing and the important currencies (excepting only some European countries) have come back so far that their depreciation is no longer a hindrance to buying.

"The export situation is tending to become everywhere more favorable. We are shipping abroad more automotive vehicles than in any other year of the industry, except only 1920, and we are making a big dent in that. We are beating 1919, which we thought was mighty good at that time, and the shipments now going forward from the United States and Canada are from 400 to 600 per cent of what they were during the low point of 1921. Month by month, with but few exceptions, the curve has been upward since the summer of last year and the detailed reports from the various territories indicate that demand will continue to grow."

The chief action of the traffic department was to recommend the appointment of a M. A. M. A. traffic committee which does not exist now. Then have all companies work through the M. A. M. A. traffic committee. This matter probably will come up before board of directors for action.

Dealer Representatives Discuss Used Car Selling Plans

Trading allowances given by manufacturers denounced as price cutting of the most destructive kind. 28 dealers in one city have such allowances. Central appraisal plan, maximum allowance plan, and the market value information plan are analyzed.

By Neal G. Adair *

IF a group of automobile manufacturers could have sat behind portieres in Chicago last week and listened to half a hundred automobile dealer association secretaries and dealers discuss causes of the used car "problem" their ears wouldn't have burned much. In two whole days of talk about used car losses and means of avoiding them the conference kept away from the favorite pastime of some tradesmen of blaming it all on the manufacturers. This used car meeting, while calling attention to a few policies of some manufacturers that contribute to dealers' used car troubles, came to the conclusion that the dealer himself must right what he thinks are his wrongs and that he can do it by application of knowledge supported by co-operation.

The conference, called by the National Association of Automobile Show and Association Managers, brought together trade association secretaries and a number of dealer members of associations from most sections of the country east of the Rockies. Dealer associations in such large cities as Chicago, Detroit, Cleveland, Kansas City, St. Louis, Boston, Baltimore and Indianapolis were represented. Still other large cities were registered. Robert E. Lee, secretary of the St. Louis Automobile Dealers' Association and acting president of the National association, was in the chair. After the discussion the association decided to compile a Used Car Merchandising Manual, which will outline the principles of profitable handling of used cars, summarize the various co-operative plans which associations and groups of dealers have employed to combat destructive competition and set forth the machinery of these plans. The manual will be made available for dealers and the various dealer associations.

It has been said that the conference did not chastise the manufacturers. It did consider in open discussion, however, such policies as trading allowances and the forcing of car shipments beyond the reasonable market capacity of a dealer's territory, both of which were condemned as obstacles to establishment of definite used car market values. It was generally agreed that establishment of such values based on local conditions and education of dealers and car owners to their reasonableness would go a long way toward elimination of present difficulties in the used car field.

THE discussion of trading allowances brought out reports that there were three or four prevailing in most cities, a few more in others and, in one city where the trade is thoroughly organized in used car co-operation and so has competent sources of information, dealers have special trading discounts on twenty-eight makes of cars. Delegates frankly branded such allowances as confessions of weakness on the part of manufacturers making them and as acts of price cutting of the most destructive kind.

On the subject of allotments the secretaries generally felt that manufacturers were entitled to hard, intelligent work on the part of their dealer organizations and that often it is failure to give this service which brings a dealer forward with complaints that he is being forced to take too many cars. The conference regarded most manufacturers as appreciative of the fact that only profit-making dealers are good dealers and attributed much of the over-allowing that prevails in the used car field to the failure of many dealers to understand the steps that lead to net profit.

There was no support of a suggestion that the industry stop trading. It was conceded that while private sales of used cars should be encouraged where conditions are right, the average owner has neither the time nor the means of finding a buyer. But the dealer performing the service for the owner should not do it gratuitously but insist upon a fair profit and manufacturers should assist the process in every possible way.

GETTING into the dealer's own problems, the conference made an exhaustive study of co-operative plans, which in some cases have helped dealers banded together in an association to reduce their used car losses. The plans fall into three general classes:

1—Central appraisal plan.
2—Maximum allowance plan.
3—Market value information plan.

The central appraisal bureau plan has various modifications. In some cities an association or group of dealers employs an appraiser who values all used cars offered in trade to the dealers supporting the bureau. The appraiser's figure is regarded as the maximum price which should be allowed for the car. If a dealer can get it for less so much the better for him. Some of these bureaus also take on the character of a used car exchange, not only appraising but actually buying, reconditioning and selling used cars as a corporation operating for the dealers who own it. The dealers have no used car departments. In other places the bureau merely makes the appraisal for the dealer who sends in a car, also reporting the appraisal price to other co-operating dealers who may inquire in case the owner also offers it to them. These used car ex-

*Editor, *Motor World*.

changes and central appraisal bureaus have worked at least fairly well in some small cities. None, so far as is known, has succeeded in a large city.

The maximum allowance plan is found in numerous modifications of the Saginaw plan, which has been in operation in the Michigan city for eight years. Under the original plan maximum fair price allowances on all models of all makes of cars represented in the city are stated by the dealers with agencies for these cars. The lists are compiled and printed in a book distributed to co-operating dealers by a central committee which also, on the basis of market values, fixes maximum allowances for cars not represented in the city but more or less frequently offered in trade. The allowance price books usually are of vest pocket size, with loose leaves so that price changes, due to new car price changes or other causes, can be put in promptly without inconvenience. Boston and some other cities have modified the Saginaw plan by basing maximum allowances on a careful checking of current market values effected by gathering and averaging used car selling prices reported, usually weekly, by co-operating dealers. Whether individual dealers or the central committee states the maximum allowances there is generally a ground-work of used car value depreciation on a percentage basis.

In Boston, now, 1922 models are listed at 65 per cent of list, 1921's at 55 per cent, 1920's at 40, 1919's at 30, and 1918's at 22. Some other plans allow only 60 per cent for a year old model.

The market value information plan is an exchange among co-operating dealers of used car selling prices. In several large cities, including Chicago, Kansas City, St. Louis, Cleveland and Detroit and many smaller cities, the dealer association secretary or a special used car secretary is the pivot around whom the plan revolves. Each week, on a day specified, each co-operating dealer sends to the secretary a list of all used cars sold, giving the year, model and other identifying information, together with the car's general condition and the price for which it was sold. The secretary tabulates the information, multigraphs it, and at the earliest possible moment sends it out to all members. Names of dealers selling the cars, of course, are not included in the report; the secretary alone having this information, which is held confidential.

THIS is the simplest form of market value information service. Improved plans, which most of the cities have worked out, include a listing of cars on hand so that if cars of certain makes and models in any considerable numbers are shown unsold week after week dealers are warned that they are not good cars to trade except at prices which will permit attractive resale offers. In still other cities there are columns in the report for allowance price and sales price. When selling prices show losses dealers receiving the report are effectively reminded of the folly of over-allowances.

It is a foregone conclusion that none of these plans—central appraisal bureau, maximum allowance or market value information—can be introduced or operated without pressure being brought to bear upon individual members of a dealer community or organization. Pressure on a penalty basis has never accomplished anything, except perhaps for a brief period, in any city. Threaten to fine a dealer or throw him out of an association or embarrass his credit facilities at the banks if he doesn't co-operate and you make him an enemy of the co-operative plan. Unless co-operation is based on friendship and mutual trust it won't last because it isn't co-operation. So the pressure which association officers and members bring to bear upon individual members is an educational pressure.

THE individual dealer must be shown that it is to his advantage to give information so that in return he can get information, thus contributing to and profiting by the establishment of used car market values. He must be shown that it is to his advantage to hold used car allowances down to market value figures, thus encouraging other dealers to do the same thing and cut down destructive competition. He must know that it is unsafe to over-allow on used cars by pointing out dealers who have failed because of it. When dealers in a maximum allowance plan are called on the carpet for over-allowance they find it uncomfortable to explain their injection of a destructive element into competition, particularly when shown what it is doing to their own profits. When there is just a sales price information service, without maximum allowance figures, dealers are confronted weekly with the prices that cars are bringing in the market. These constant reminders, with jolts from time to time from their bookkeeping departments, in many cities have helped to discourage the over-allowance habit. There is not much evidence on the central appraisal bureau of used car exchange plan. In Quincy, 80,000 population, only 10 out of 24 dealers are co-operating in the exchange, which appraises, reconditions and sells these 10 dealers' used cars. Yet the conference was told that the plan was keeping down these dealers' losses and would be continued.

MORE than 40 secretaries and managers of automobile trade associations met in Chicago last week and talked about used cars. They called their meeting a National Used Car Conference.

The secretaries were not interested in what others might think of them but in sifting some fundamentals out of the welter of opinions and ideas prevailing about used car merchandising. The same thought impelled their associations to spend the money required to send them to the meeting.

The discussion, on which a manual for the guidance of trade associations is to be based, did not for a moment descend to a rawhiding of manufacturers. It analyzed suggestions for improvement of used car conditions and recognized that in the main dealers must work out the improvement.

An outline of the discussion, in this article, we believe will be of interest to manufacturers' executives.

The principal talk on co-operation was made by L. B. Sanders, secretary of the Boston Used Car Statistical Bureau, supported by eighty Boston dealers. Sanders declared that a business which had cost dealers more than $200,000,000 in used car losses in 1921 needed "a raid by a band of fool-killers." It needed to be made to understand that the dealer with his 20 or 25 per cent commission on a new car has to sell two cars before he gets into his hands the full list price on which the commission is based. It costs just as much to sell the used car as the new and unless the dealer does it without loss, in which the used car reconditioning cost and salesman's commission are included, he does not get the full profit on the new car.

Sanders told how this fact had been emphasized in getting Boston dealers to stop competitive bidding up of used car prices; how the necessity for correct market value in-

formation as a basis for maximum allowance prices had been used to induce dealers to make prompt and correct reports on allowances and sales; how mutual confidence had been maintained by getting dealers to call each other on the phone and learn that a prospect's tale of another dealer's extravagant bid was often pure fiction; how dealers were shown their own and the whole group of dealers' losses in the early months of the year as proof of the need for reform, and how, through newspaper stories and dealers and salesmen's interviews with prospects the public had been educated to cease expecting exorbitant allowances.

The plan has worked so well that associations, some newly formed for the purpose, have taken it up all over New England, buying and using the Boston loose-leaf, vest-pocket allowance price books.

The allowance price list, supported in Boston by the reports of prices the public is actually paying for used cars, is showing dealers that the value of a used automobile is not what the owner thinks it is or what the dealer, in his anxiety to get the owner's new car order, thinks he might get for it. The car's value is what the public will pay for it, and this is the lesson being taught in Boston.

The Saginaw plan, which has maximum allowances given by dealers on their own cars, without the modification by selling price statistics employed in Boston, has a practical feature in the exchange of used cars among dealers, so that as far as possible used cars will be marketed by dealers in the same make of new car.

Of all co-operative plans it may be said that, generally speaking, penalties for violation have passed out. The real penalty for a dealer who allows more than a used car is worth is his loss when he sells it. The "teeth" in the successful co-operative used car plans of to-day are the means which the co-operating dealers employ to show the reckless trader what his losses are and that he cannot escape them. Of these means the foundation is prompt and accurate information regarding market values.

Making Sulphur Free Gasoline and Lubricants

Petroleum Industry, as Well as Automotive Executives, Are Much Interested in Possibilities of the Silica Gel Process

IT has long been known that sulphur compounds are detrimental in nearly all petroleum products. For this reason oil refiners treat gasoline, kerosene and lubricating oils, beside other products, for the removal or partial removal of sulphur compounds, when these are present in material quantities. This is done chiefly by treatment with sulphuric acid which dissolves out the sulphur compounds. The refined product must then be freed from acid by washing.

A new method for removing sulphur has recently been perfected by the Silica Gel Corp. which is said to be less expensive than conventional methods and at the same time more efficacious. The details of the process are of interest primarily to petroleum refiners, but if the results attained are as beneficial as those who have developed the process claim, they will prove of considerable interest to all users of automotive apparatus, and consequently of importance to the automotive industry.

Gasoline and oil which is high in sulphur compounds has a tendency to deposit out a gummy substance, especially when these petroleum derivatives are heated as they are in normal use in an automotive engine. This gum deposits on inlet valves and is believed to account for a considerable proportion of the carbon deposited in the engine cylinder. In some cases it has even caused trouble in the fuel system. It also contaminates the lubricating oil and accelerates its deterioration. Since Pennsylvania and Mid-continent crudes are low in sulphur content, the refined products made from these crudes have given relatively little trouble from sulphur content. But the introduction of certain other crudes, especially those from Mexican sources, which are high in sulphur, have led to much trouble.

Gum formations are said to have been attributed at one time to the presence of unsaturated hydrocarbons, but since, by treating with sulphuric acid it is said to be impossible to make a product low in sulphur without at the same time losing a considerable proportion of the unsaturated hydrocarbon, and since products high in sulphur are frequently high also in unsaturated elements, the shrinkage caused by a treatment sufficient to remove the desired amount of sulphur is high. There is a temptation for the refiner to leave the product as high in sulphur as successful marketing will permit, thus saving as much shrinkage as possible.

The Silica Gel process is said to enable selective and complete removal of sulphur compounds without a corresponding removal of unsaturated hydrocarbons, thus leaving in the fuel elements which are believed to be highly desirable when free from sulphur.

Silica Gel is in gelatinous form only in one stage of its manufacture. As used in the process here referred to, it is a hard glassy material having the appearance of quartz sand, which is ground to a fine powder. It has the chemical formula SiO_2. It is said to possess a highly porous structure, the pores being of exceedingly small and uniform size. The pores are said to effect a selective separation of the liquid having the lowest surface tension from a mixture of hydrocarbon liquids, and since the sulphur compounds present in petroleum oils have lower surface tension in relation to pure hydrocarbons themselves, the former can, it is claimed, be completely separated from the latter, when treated with the proper proportion of silica gel.

Prominent executives in the automotive industry are understood to be much interested in the process, and certain of the oil refiners are known to be negotiating for rights under the Silica Gel Corp. patents covering the process.

Midwest Engine Compression

AN error was made in regard to the compression of the new Midwest passenger car engines in the description which appeared in AUTOMOTIVE INDUSTRIES of Aug. 10.

Model 411 and 412, which are the 3⅝ x 5 in. jobs, carry 90 lb. compression instead of 75 lb. as indicated, while on the model 410, compression is 95 lb. instead of 80 lb.

New French Light Car Has Four-Cylinder Air Cooled Engine

First departure in France from conventional water cooling. Belt-driven centrifugal blower, mounted in front, forces air through cast aluminum jacket. Cylinders are cast separately with vertical cooling fins and have vertical valves seating in head.

By W. F. Bradley

AIR-COOLING has never found much favor among the automobile manufacturers of Continental Europe. Even the prominence given to 67 cu. in. light two-seater cars, during the last three or four years, has failed to bring forth anything but four cylinder water cooled jobs.

The first break away from this preference for water cooled power plants has been made by a French company formed to produce the S.A.R.A. light car with a four cylinder air cooled engine to the designs and patents of engineers Tiserant and Piazzoli. Incidentally this is the only four cylinder air-cooled job in France and also the only one with a forced draught of air.

The S.A.R.A. has four separately cast cylinders of 62 by 91 mm. with vertically placed cooling fins and vertical valves in the head, operated in the usual manner by push-rods and overhead rockers. The four cylinders, which are mounted on an aluminum basechamber, are surrounded by a cast aluminum air jacket with which is combined a centrifugal turbine in the forward portion, immediately behind the dummy radiator. The turbine is driven from the crankshaft at one and a half times engine speed by a broad woven camel's hair belt. Eccentrically mounted ball bearings are used for the turbine shaft, thus allowing of taking up slack in the belt.

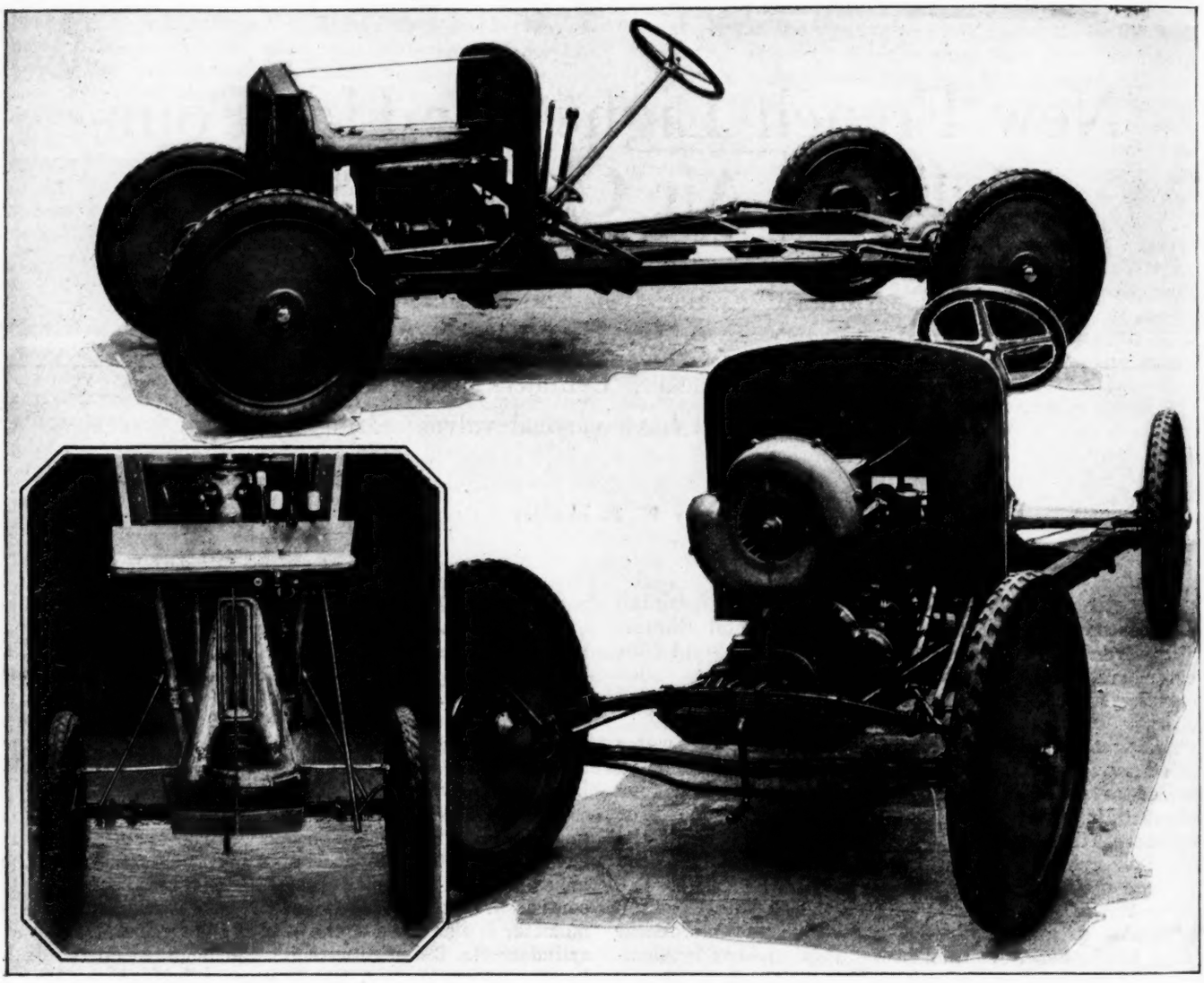
The turbine is capable of handling 56,000 cu. ft. of air a minute. It draws the air into a spiral housing and delivers it through the two main air leads forming a V when seen in plan view, to left and right of the cylinder heads. The portion of the air jacket immediately above the cylinder heads is removable for access to the valves, and on its inner face is a baffle which serves to deflect the horizontal current of air downward, around the cylinder barrels. The shape of the air passages has been designed to reduce resistance and the interior is finished off perfectly smooth, with a view to securing efficiency and silent operation.

OFFICIAL tests of this engine have been made at the laboratory of the Automobile Club of France, under the direction of Engineer Lumet. Of six individual one-hour full load tests, the average power developed was 28.93, at an average crankshaft speed of 2668 r.p.m.. The maximum engine speed was 2720, and the lowest speed to which the engine could be throttled was 210 r.p.m. These trials were made with an American Bosch magneto and Solex carbureter. There was no misfiring at any time, the cooling was satisfactory, and the engine was free from vibration. The engineers responsible for the S.A.R.A. point out that being stationary instead of in motion through the air, the turbine absorbed more power than would have been the case had the engine been moving over the road at the corresponding car speed. The difference probably would have brought the power up to 30.

As the cooling is designed to be adequate for the most strenuous conditions, the engine will run too cold on average service. On this account a throttle is fitted in the mouth of each of the two main air passages and a single control brought up to the dash. A distance type thermometer is also fitted at the base of the air jacket, between cylinders No. 2 and 3, with its dial mounted on the dash by the side of the throttle. The most advantageous degree of heat is marked on the dial, and clients are recommended to adhere to this, by the use of the air throttle.

A TWO ball bearing crankshaft is used for the engine. The connecting rods are I-section and of bronze-aluminum alloy. Pistons are of aluminum alloy. Lubrication is assured by a gear pump which delivers oil direct to the crankshaft bearings and to troughs for the connecting rods. The intake manifold arrangement is one which is finding increased favor among Continental engineers. A perfectly straight manifold, of uniform section, polished internally, is employed. A Solex carbureter is mounted at the dashboard end by means of a flange. A hole is cut in the dash so that the driver can reach the carbureter without moving from his seat. This type of mounting is used, among others, on the Voisin 12-cylinder engine.

The weight of the engine, including its accessories, is 175 lb. The chassis has a wheelbase of 99 in., a track of 43 in., and weighs, complete, 640 lb. The S.A.R.A. has a three speed gearbox forming a unit with the engine, an inclosed propeller shaft and Gleason gears, without a differential, in the rear axle. Springing is transverse in front and quarter elliptic at the rear. The latter, as will be noted by reference to the cuts, are bolted inside the channel section side members of the frame, and radius rods are fitted above the spring. The radius rods are hinged to the frame at the points at which the rear springs are attached.



Three views of the new French S.A.R.A. chassis equipped with four-cylinder air-cooled engine. Note mounting of blower and arrangement of air ducts, also the radius rods located above the rear springs

2,000,000 Miles of Safe Flying

TWO million miles without fatality is the record that the United States air mail service has achieved. Almost this entire distance was flown with an efficiency of 94 per cent and during the last eight weeks, ending Sept. 9, an efficiency of 100 per cent was attained.

Col. Paul Henderson, Second Assistant Postmaster General, in a talk before the members of the Aeronautical Chamber of Commerce in New York, expressed the hope that night service would be installed by next spring and that day and night service must be maintained if the airplane is to offer much to the mail service.

Plans have been made to light the Chicago field and ultimately to light flying fields every 25 miles between Chicago and Cheyenne. With a beacon light which is visible 40 miles on an average night, there will be no time in which a pilot will not have two lights in sight.

Experiments in the lighting of flying fields has developed an interesting fact, namely, that lights must be so arranged as to give daylight perspective. The ordinary method of flooding a building with light from the sides will not serve for aviation, consequently a system of goosenecks has been devised which will light the field much as the sun would. The planes must carry a powerful searchlight while the field is to be bordered with lights and a colored light centered to indicate the exact spot to land.

The installation of night flying would decrease the time of mail service from San Francisco to New York by 30 hours, making it possible to send a letter across the continent in 28 hours.

Col. Henderson believes that Alaska offers great possibilities for the use of airplane mail service due to the fact that distances are so great. He believes that the government should continue the air mail service while it is in its development stage, but that eventually it should be turned over to private contractors, much in the same way that the mails are now carried by the railroads. He regards airplanes not as competitors but rather as adjuncts to the railroads in the carrying of mail. It creates, he thinks, a new necessity for service for which people will be ready to pay more for than the customary delivery service. For example, bankers wishing to send securities to Chicago may save vast sums of money by quick-mail service.

Air Cooled Engines Not Inherently More Economical

Maximum desirable mean cylinder temperature not known. Lack of data on this and other factors accounts largely for numerical superiority of designs using water cooling. Weight advantage of air cooled type in question. Data on area of cooling fins given.

By A. Ludlow Clayden

WHILE water cooling contains many factors which have been neglected by a majority of engineers, it is probable that direct air cooling is still less fully understood. There are several commonly believed fallacies, one of which is that air cooled engines generally are more efficient than others from a fuel economy viewpoint. This is utterly untrue. The fact is that *certain* engines with direct air cooling have been so designed in other respects that they are abnormally efficient. Also many of the air cooled engines that have been used for automobiles and motorcycles have been so skimped on surface that they run at high temperature with only medium throttle opening. Such engines will be liable to show economy superiority over the average water cooled job, but they will not stand more than short period operation without overheating if anything like full power or the same brake mean effective pressure as the water cooled job is attempted, and they will show no superiority at all over a cooler running engine with proper fuel intake heating. The economy idea arose simply from the confusion of cause and effect which the writer has mentioned before as being difficult to avoid in thinking of cooling problems.

Perhaps it is an advantage to run an engine hotter than 200 deg. Fahr. mean cylinder wall temperature, which is about the limit of water cooling. Difficulties with piston expansion and with lubrication point rather the other way if anything, but the chances are that the immediate ideal of air cooling is to exactly duplicate the performance of water cooling with respect to such things as valve and spark plug temperatures at least, and this has been the real aim of most air cooled engine designers.

Another fallacy is that the air cooled engine is essentially lighter. Lanchester is very cautious in his statements regarding the possible weight of the cooling system with direct air cooling, and, as has been shown in previous articles, his assumptions for the weight of water cooled systems, though correct at the time, have since proved to be very much greater than the actual facts.

Still, there is more knowledge on air cooling now, too. One of the most important changes of the last few years in aircraft engineering has been the increase in brake mean effective pressure obtained; that is to say, the power from a given size of cylinder. As the brake mean effective pressure increases, so does the efficiency of combustion, and the proportion of heat *necessarily* rejected drops from the heat equivalent of the brake horsepower as in automobile practice, down to perhaps half of that amount or even less.

There is no object in repeating here the calculations given by Lanchester. The important thing to keep in mind is that for any given material there is a best proportion of cooling fin and of spacing or pitch of fins. This is another way of saying that for a cylinder of given size there is a fairly definitely proportionate amount of surface which can be added to it in the form of fins with one constant for cast iron, another for aluminum, another for copper, and so on. The advantage is with the small cylinder, because its ratio of surface to volume is greater. With a small cylinder of automobile size surface, within close approximation to the theoretically correct proportions for the fins may be added and provide about a half square foot per maximum horsepower, using cast fins. With the same standard of engineering on a cylinder of twice the bore and stroke the total possible cast fin surface would be around one-quarter square foot per horsepower.

There are, of course, two present types, the cast fin and the copper fin. Obviously, the only theoretically correct form for a fin section is a triangle, the thickness decreasing as the distance from the root of the fin (the cylinder wall) increases, so maintaining the heat flux at

THIS is the concluding article of the series of four dealing with the subject of engine cooling. The articles have created much interest and constitute a valuable contribution to the rather meager literature of the subject. Their value will be further enhanced if readers of Automotive Industries will contribute written discussion or any additional data which will tend to throw light on points which may be in question.

We appear to be on the verge of some comparatively radical changes in the design of cooling systems. The present prevailing type suffers from several disadvantages, most of which can and should be overcome. It is evident that a frank interchange of information on this subject will be of benefit to all concerned.

a constant value and keeping the temperature constant over the whole fin surface. Obviously, too, by using sheet metal a great many more fins can be attached and more surface of a lower average of efficiency obtained. It appears likely that on the score of weight saving the tapering fin has it, but in automobile work, where manufacturing advantage is more important than weight, the reverse may easily be true.

S. D. Herron, who has developed a number of air cooled aircraft designs both for the American and British armies, and is now carrying on his work at McCook Field, has provided the writer with some instructive figures on recent air cooled engines of repute. He says: "With the type of construction used by the Air Service the cooling surface obtainable for a cylinder of any given capacity will not vary much. For cylinders of 160 cu. in. capacity about 0.2 sq. ft. per maximum brake horsepower is required and is readily obtainable. In an aircraft engine cylinder of 70 cu. in. capacity 0.3 to 0.35 sq. ft. is required. These amounts of surface will give maximum output and fuel economy with blast velocities of 90 m.p.h. in the case of the larger cylinder and 60 m.p.h. for the smaller. Reduction of blast velocity will involve reduction of output and increase in fuel consumption.

"THE general tendency is for the surface per brake horsepower to diminish, owing to a slow but steady increase in output obtained, due to increase in brake mean effective pressure and in revolutions from a given size of cylinder. The fin area obtainable for any given size of cylinder will not increase very much with other improvements in design or development.

"For automobile engines having in general lower mean effective pressure and higher revolutions per minute with much smaller cylinders than used for aircraft, the surface available with hemispherical head cylinders of cast iron or cast aluminum will vary between 0.3 and 0.5 sq. ft. per brake horsepower. All the figures given are for cast or machined fins of about ⅜ in. pitch and 1 in. length, as used in modern practice.

"On the Type J aircraft engine of 5⅝ in. bore and 6½ in. stroke the total surface is 11.4 sq. ft. or 0.254 sq. ft. per brake horsepower at maximum output. For the B.S.A. (a British light car) approximately 3½ x 3¼ in. bore and stroke, the total surface is 4.18 sq. ft. and the surface per brake horsepower at maximum output is 0.492 sq. ft.

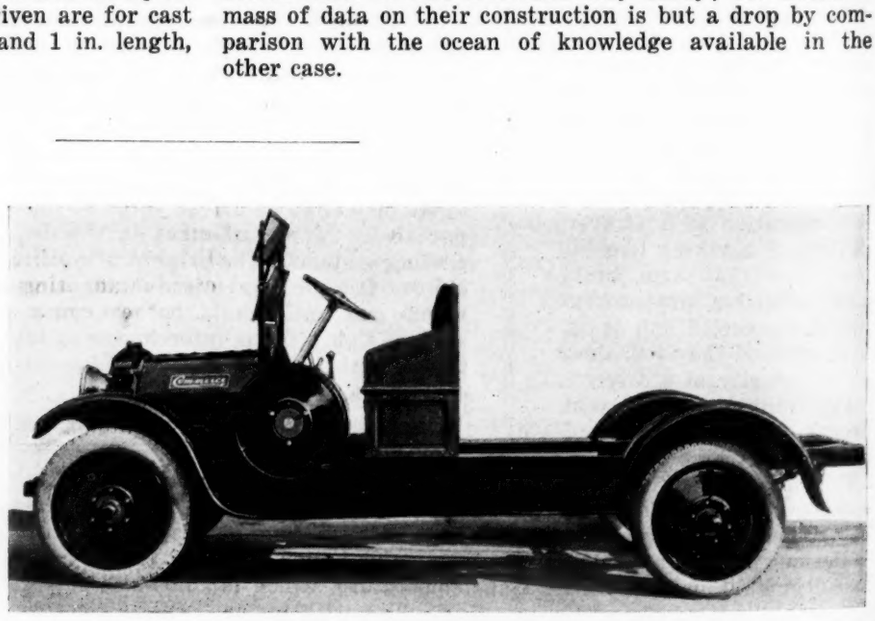
"It is, of course, obvious that the cooling surface for the average brake horsepower (normal running instead of full power) will be in the neighborhood of 1 sq. ft."

ON the question of the volume of air required per brake horsepower per minute for automobile cooling, Mr. Herron states that he thinks 30 cu. ft. probably adequate for severe conditions, but points out that the deciding factor is the length of time it is desired to permit the engine to operate at full power. In water cooling this same consideration occurs, and the writer stated his opinion as being that operation at full throttle and full speed on high gear ought to be possible on any passenger car, and that if such a condition exists with water cooling it will usually be found that the system is adequate to take care of all normal requirements.

Since the air supply with fan-supplied air must be in some proportion to the speed of the fan, the same statement is likely to hold true. It may be pointed out, however, that the reserve capacity or "flywheel" that provides for extra output at low speeds on low gear is, in the air cooled engine, simply the mass of the cylinders, and we have the heat capacity of the castings as compared with that of the circulating water. Now we cannot heat a water cooled engine hotter than boiling which limits the flywheel reserve effect definitely; just how hot we may permit an air cooled engine to go temporarily depends upon many other things.

The oft-repeated question, Why are there not more air cooled cars? can be answered very easily; the available mass of data on their construction is but a drop by comparison with the ocean of knowledge available in the other case.

New Commerce Truck Model



1923 Model 9 Commerce special delivery speed truck chassis

THE Commerce Motor Car Co. has just put on the market its new Model 9, special delivery speed truck. This truck has a 1500 to 2500 lb. capacity and sells in chassis form for $1150 f.o.b. Detroit. With canopy top express body, it sells for $1330.

The new truck incorporates the 3¾ by 5 in. four-cylinder Continental truck engine with three-bearing crankshaft. This is a unit powerplant with a cone type of clutch 14 in. in diameter. The truck is driven through a tubular propeller shaft with a spiral bevel, ¾ floating type of rear axle. The rear axle ratio is 5.87 to 1. The brakes are 16 in. in diameter, both sets being mounted on the rear wheels. The wheels are Michelin steel disk with roller bearings and the truck is equipped with 32 by 4½ in. non-skid pneumatic cord truck type tires, front and rear.

A single standard wheelbase is used, this being 127 in. and a choice of four types of body is provided. These are, open express, canopy top express body with curtains, stake body and panel body. The open express body is $1250, the platform stake body $1300 and the panel body $1430.

Why Railroads Don't Buy More Rail Cars

Some pertinent facts which should interest both sales and engineering departments. Insistence upon conventional automotive construction throughout is one great obstacle. Use of railroad type axles and bearings would decrease sales resistance.

By Donald A. Hampson

IN view of numerous successful installations and knowing the field that is ripe for harvest, the question naturally arises, why don't the roads buy rail cars?

The answer is simple enough. Railroad men don't like automobile construction. They have found out from the experiences of nearly twenty years that the big heavy rail cars do not meet an economic need, in the long run. They must be sold on a lighter car and flexible units.

If an engine manufacturer, for instance, produced a unit that could be set on the truck of an ordinary passenger coach and drive directly to the truck axles, such units would probably sell without resistance in spite of the fact that the coach's capacity is five times greater than is usually needed. Such a car would not smack of automotive construction, but it would not solve the problem any more than its predecessors did. Nevertheless it would appeal to the railroad man because it would include his familiar coach and truck constructions and would be simply driven by an engine similar to that in his automobile. A few years' experience would again prove the proportion of dead load to pay load too great and the disgusted manager would return to his two-car steam train.

To use a catch phrase, the railroad man is "in the driver's seat." This is a buyers' market and the salesman of rail cars must expect to do two things before he can get the coveted signature—his product must reflect railroad practice, combined with simplicity, and he must be prepared to sell the railroad man on economy.

The motor truck in highway service is making it easier to convince railroad men, but the latter resent the idea of any one outside of their own organizations knowing anything about railroads. The automotive man with something to sell is still regarded in the light of an inventor and as such must overcome a natural prejudice. Until a steam boiler of small size is perfected, the automotive salesman must hammer his way through that wall of prejudice. A rail car with steam as motive power is already three-fourths sold.

Before the salesman can hope to do business, his product must pass out of the experimental stage and emerge rationally engineered. And the successful engineer will have to be strong minded, far sighted and unbiased—he will have to waive conventional practice and S. A. E. standards to some extent. He must get the railroad man's point of view.

Confining ourselves to a car less palatial than a Pullman, probably four or six wheels, we must direct attention to perfecting the following members:

1. A better drive from wheels to body.
2. An improved spring suspension.
3. Simpler and more durable axle bearings.
4. Simple rear axle construction.
5. More economical gear ratios.
6. Improvement of the transmitting system from engine to axle.

The drawing, Fig. 1, shows a construction which automotive engineers have apparently overlooked. It is the pedestal drive. In one unit this design is capable of taking care of the first four items named above.

In the final analysis, it will be found that the railroad man will mass his objections around axles and bearings, that he will insist that there the rail car is weak. Cars for use in steam trains have been built with rigid axles

ALTHOUGH many rail car installations are proving satisfactory and highly economical, there is still much sales resistance to overcome before rail cars are used to the extent they can be used with profit. Some of the reasons for this lack of enthusiasm on the part of railway men are here explained by a man experienced in both railroad and automotive circles.

* * *

The information given is worthy of study both by executives and engineers. The future of the rail car depends largely upon getting the railroad and automotive men to cooperate. Conventional railway practice cannot be followed completely in adapting truck chassis to rail uses. Neither can conventional automotive practice be imposed upon the railroad without regard to experience, the value of which has been proved by years of service. Success will be attained only by compromise. The sooner this fact is appreciated the better for all concerned.

and with anti-friction bearings and various devices intended to eliminate hard riding, bearing troubles, friction, maintenance, etc., but not one per cent of these devices ever boasted a duplicate installation because they either failed to show an improvement or their maintenance was out of proportion to their worth.

Automotive engineers cannot justly condemn railroad axles and bearings. Unthinking, they call the familiar journal box construction a low order of design. It is not; it passes the acid test, that of service. It may have been many long months since boxes were oiled, but an overloaded freight car runs serenely on at 35 m.p.h. without attention and carrying bearing pressures as high as 600 and 700 lb. per sq. in. And that bearing can be repacked or its "brass" changed by the most ignorant workman on the force. It is a triumph of design besides which some automobile bearing and oiling systems fade into oblivion.

Such a bearing system is good enough for rail cars. It is simple, it is durable and cheap. Railroad labor can make all the adjustments required. Railroad men are not unprogressive and in this one respect they have standardized on a construction that shows the best all around results—a rail car with such construction starts out with 30 per cent less sales resistance than the one with an elaborate system of anti-friction bearings.

Despite impressions to the contrary, ball and roller bearings do not show the savings expected in single car operation. Exhaustive tests on street cars have shown that plain bearings consume 15 per cent more power in starting than do anti-friction bearings under the same conditions, but this excess has dropped off considerably at 5 m.p.h. and disappears entirely at running speeds. Tests made upon trucks for rail cars have shown exactly the same results.

Why, then, continue the use of ball and roller bearings on axles? The most frequent source of trouble with rail cars has been rear axle trouble, first bearings and then gears. A majority of rail cars are destined to go where repairs will be made in yards along ballasted track. Disassembled axle parts of necessity will be laid down in this dirt—the impossibility of getting these accurately fitting, numerous small parts together again without carrying grit with them is at once apparent. One such actual experience will show the automotive engineer the folly of delicate construction and will arouse his admiration for the time-honored brass of the railroad man.

Ball or roller bearings should be retained in every part where now used ahead of the axle. There is nothing gained by using plain bearings there, in fact, to secure equal results would entail special construction without any gain. Axles are subject to the pound on rail joints, however, and as unsprung weight, aid in the battering that hastens the renewal date of anti-friction bearings.

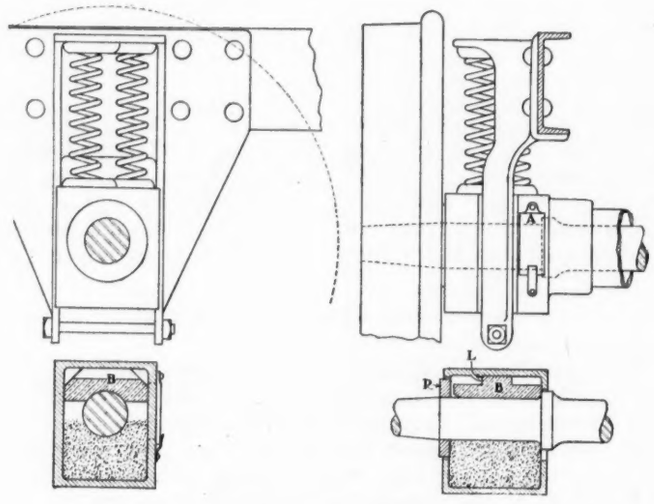


Fig. 1—Diagram showing type of axle bearing recommended by the author for rail car service. It is said to be simpler, much cheaper and more satisfactory for the purpose than the anti-friction types of bearing, and far more acceptable to the railroad man

The axle shown in Fig. 1 has a 3 x 6-in. journal. This size is an M.C.B. standard journal, something that appeals to the railroad man, and is ample to carry any load imposed by a rail car aside from those of the Pullman type. (An old drafting room rule specifies 300 lb. per sq. in. as a working load for car journals, though modern practice deviates from this).

A journal box—better called journal "housing" out of respect to automotive practice—construction involves an axle built specially for railroad work. Axle companies are already making special railroad axles, so it may be seen that the railroad axle is destined to become a stock product. While they are making one, it should be the best one in the light of railroad experience.

The journal housing in Fig. 1 is a casting rivetted to the tubular side members in the usual manner. The differential case is rivetted to the other end, also as usual. Whether or not the differential case houses equalizing gears should depend entirely on road conditions; the divided axle is best on roads with sharp curves, but for use on steam roads, where the curves average only 4 to 6 deg., there is nothing gained but complication and the continuous axle is to be preferred.

Reference to the drawing shows the brass B, a half bearing resting between the sides of the housing. Parallel to the axle center line, the brass is retained between the back wall and a lug L cast in the roof of the housing. As the brass has only one-third bearing on top, it is enabled to adjust itself for track misalignment. The space below the journal is filled with waste and oiled—access may be had through the opening at A.

End thrust is taken between axle shoulders and the ends of the brass. An eighth of an inch play is allowed at this point. In the lurch of the car from one rail to the other, this play must be taken up before actual contact results and as the bearing is loaded meanwhile, the blow is softened on the way. At the outer end of the axle, thrust may be taken against an axle shoulder or against the wheel hub itself or against a removable ring, as shown at R.

The wheel must be removed before a brass can be changed. This is simple work for a railroad laborer, involving no hardship with the relatively light wheels on rail cars even though it be done much more often than brasses actually have to be changed. At this writing it is understood that one concern is working on an axle design wherein the half bearing can be removed by drawing it inwards and lifting it from a pocket, on top of the axle housing, uncovered by a plate. Bearings of this type are removed by placing a jack under the housing, raising it enough so the shoulder on the brass frees itself from the lug, then withdrawing the brass longitudinally.

The center axle bearings can be plain or anti-friction. As these are not subject to the ring of metal to metal,

there is no objection to the ball or roller type. Pinion shaft bearings may well be carried to an extreme of oversize and spacing.

Transmitting the tractive force of the wheels from ground to body and the spring suspension of the body have given engineers infinite study as well as endless worry. The wearing of spring bolts and eyes, the noise and rattle, a drive that will ride easily and brake comfortably—these are the salient features to be considered. One typical motor truck includes 70 parts besides nuts, rivets and cotters in making what the engineers consider a high class construction—these are—

4 spring hangers,
8 spring bolts,
28 spring leaves,
4 straps,
4 shackles,
4 spring clips,
8 grease cups,
6 parts in the adjustable radius rods,
4 radius rod bolts.

Contrast this multiplicity with the design of Fig. 1, which consists of 6 parts for the entire suspension and drive. Two coil springs are used on each side, each end resting in a socket. Spring makers do not hesitate to supply coil springs for such work that will give the best of riding qualities under varying load conditions. Pedestals are rivetted to the frame members just as spring hangers are. The vertical faces of the legs are machined to suit corresponding machined faces in the housings. An easy sliding fit is made and wearing plates (not shown) allow for renewal.

Conventional truck drives and suspension were developed for automobiles and motor trucks. These vehicles encounter road inequalities not dreamed of on railroads and the complication of design may be justified by highway conditions. That is no reason why such complication should be continued for a highway of steel that shows only the space between frog rails as a maximum inequality. Pedestal truck construction may be expected to take away much of the shock, noise and expense of rail car suspension. Its adoption will be one of the strongest points in gaining the favor of skeptical railroad buyers.

The final drive is still an open question. Chains have much in their favor, but shaft drive is more popular, both with automotive and railroad men. Considering the shaft drive, the demand for simplicity is going to center attention on the bevel gear axle with a single reduction.

Here, again, highway conditions have been allowed to cloud the real issue. The tractive force required to move a given load on rails and the absence of real grades make it possible to use a ratio as high as 3 to 1. By so doing more economical engine speeds are obtained, smoother riding results because there is not the vibration in descending grades. A car in which the gear reduction is too great is apt to be "logy" and unresponsive. Gear boxes with four, or even three, speeds can include a sufficient range for starting and economical running without resorting to a big reduction at the bevels. The two-speed axle or selective, nested bevels offer possibilities untouched in the way of economical engine performance and freedom from vibration.

With the pedestal type of drive and suspension, two universal joints are required. Most motor trucks use two universals with conventional drives. The all-metal joint has lost in favor for highway vehicles, but railroad conditions are different—the angularity is never as great on the rails and this opens up the field for a small diameter joint, all metal, of few pieces, and with limited range.

In every field of endeavor, it is slow expensive work educating the trade to your way of thinking. Automotive men have found that out in attacking the railroad problem. The sales department had to suffer for the work of the engineering department and when the (infrequent) sales were made the engineering department had troubles coming their way at full speed. These troubles and the undeniable sales resistance can better be met by adopting the railroad man's view than by any educating process. It means breaking away from the crowd. The break is rational, however, just as much so as it was to break away from existing railway and machinery ideas in developing the automobile. It is one purpose of this article to direct attention to rational lines toward making the rail car a success.

Whether the car is to accommodate 25 or 50 passengers depends upon local railroad conditions and demands. It is the work of the salesman to bring the railroad executive to this frame of mind. It is impossible to run a big car as cheaply as a small one—it is silly to demand space for fifty when the average load is twelve. The railroad man must realize this before he can realize on a less expensive means of caring for his traffic than the steam train—he has got to see it—he has got to learn that he can't keep his cake and eat it, too.

When this point has been reached, it may be found that a car which is a modification of the truck maker's product will answer for two-thirds of the demand. Such a standardized product can be made to sell at a compelling price. Rightly engineered, it will fill the long-felt want on railroads.

The rail car salesman cannot fail to turn the recent shop men's strike to his advantage. In the matter of rail car repairs, the harrassed general manager need not be throttled by union control, for besides the great army of garage workers, every man who cares for his own car is capable of doing ordinary running repairs. The inconsistency of the claim that rail cars are more expensive to keep up may be noted by comparing rail car figures with the $300 and $400 per month that is spent on the maintenance of even light locomotives—and the end of the strike's first week revealed hundreds of these rugged pieces of rolling stock gone bad already.

During the year of 1921 there were 1626 miles of railway lines abandoned in the United States. Practically all of this mileage was steam roads. And during the same period the Interstate Commerce Commission received applications for abandonment on 760 additional miles.

Of the lines abandoned, one-sixth of the total mileage has been permanently discontinued and the tracks torn up. The remaining lines have been left a prey to the elements—either as not justifying the expense of removal or in the hope of resuming operations at some more favorable time. Not all of the fifty-six roads that were abandoned wholly or in part are in the "short line" class; for instance, the Colorado Midland, which abandoned its entire 338 miles, for the operation of which it was equipped with 63 locomotives and 800 cars.

The reason for such extensive abandonment is found in the oft-repeated tale of light traffic and heavy operating expenses. Some of these lines were already in receiver's hands, others were unprofitable sections of trunk roads, and the greatest in number were the smaller roads; compelled to give service established during other and more prosperous days, a shifting of population or exhaustion of natural resources has made continuance of that same service unprofitable even though labor and maintenance had remained at original levels. The same

is true of service maintained on many lines that are not abandoned—other service is earning the revenue that is "carrying" the light traffic sections. The management of one of the largest Eastern trunk lines states that 32 per cent of its total passenger traffic earns less than the cost of coal and the train crews' wages.

Railroad men have dreamed of lowered labor costs and a less expensive mode of operation, and this is true of the lines annually abandoned but not taken up, for, if cars could be developed to run for "cents per mile" instead of dollars and these cars did not require the perfection of roadbed necessary for steam trains, then the existing traffic could be handled at a profit. The automotive engineer rises to state that the rail car is already here and will do all these things. True, we have the rail car and the manufacturers are in a position to supply several thousands of existing types within a year though, actually, the sales are so infrequent as to excite newspaper comment when made.

Beyond question the most satisfactory installations of rail cars thus far made are those in which standard motor trucks have been adapted to railroad purposes. Intensive study of this type will make it still more popular, particularly on small roads. The adapted motor truck has these advantages which cannot be usurped by the bigger, specially built rail car—due to quantity production, its first cost is far lower and the quality remarkably high; the power plant and transmission is highly developed and these units are thoroughly understood by every automobile mechanic; these parts are standardized, cheap and found in service stations in every part of the country; the cost per mile is so low that the cars show a profit even under very light operating conditions.

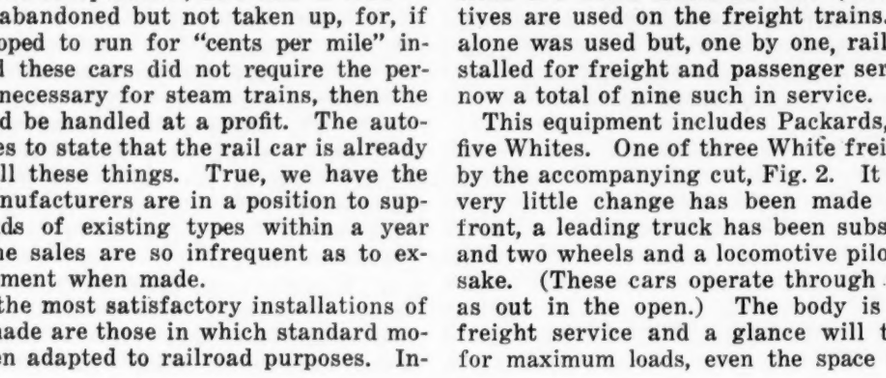


Fig. 2—A White rail car being used successfully for carrying freight on a western railway. Note the turntable which is carried under the frame and can be used to turn the car about at any point on the road

It is worthy of note that some of the most successful installations of this equipment have not been by railroad companies. For instance, the Sugar Pine Railway of California had become unprofitable and the owners applied to the I. C. C. for permission to abandon, which was granted. After the road ceased to be a common carrier, it was leased by a large lumber company, which now operates rail cars over its 15 miles, primarily as a plant facility, but affording such service as the sparsely settled region actually needs.

The Harlan Coal Co., in Kentucky, could not afford to continue its steam train and three years ago bought rail equipment for a Dodge one-ton truck. They haul freight and passengers over a nine-mile line and say, "The car easily makes 10 deg. curves with the steering gear bolted fast and takes our heaviest grade (3 per cent) with any load we can get on. It very well serves our purpose and is giving good satisfaction in every way."

What is probably the most extensive use of rail cars in the country is found on the Hetch Hetchy Railroad operated by San Francisco in connection with its water supply system in the Sierra Nevadas. This road forms as severe an application as could be wished to test the roadability of stock chassis; it is 68 miles long, largely through mountainous territory, has maximum grades of 4 per cent and curves as sharp as 190 ft. radius; the railroad man will appreciate how severe these conditions are when informed that (steam) geared locomotives are used on the freight trains. Originally, steam alone was used but, one by one, rail cars have been installed for freight and passenger service until there are now a total of nine such in service.

This equipment includes Packards, Pierce-Arrows and five Whites. One of three White freight trucks is shown by the accompanying cut, Fig. 2. It will be noticed that very little change has been made in the chassis. In front, a leading truck has been substituted for the axle and two wheels and a locomotive pilot added for safety's sake. (These cars operate through city streets as well as out in the open.) The body is specially built for freight service and a glance will tell that it is built for maximum loads, even the space under the overhang at the rear being utilized.

Further details of these interesting cars may be seen. A turntable is part of the chassis. Carried underneath and suspended at the center of gravity, when light, it may be swung around at right angles, overhanging the ties, and then the car jacked up until the flanges clear the rail, when it is swung around to face in the reverse direction. Backward operation would be unsafe on such a mountain line and this device forms a convenient means of turning at any desired point—in connection with the delivery of a load of material or supplies at locations other than settlements or camps, this outfit is as efficient a means of transportation as could be devised. Compartments for blocking and jacks are arranged in proximity to the turntable.

Brakes are supplied on all six wheels. On the rear wheels the drum brakes are supplanted by two brake beams and four shoes bearing against the treads, forming a clasp brake of approved modern design, most efficient and insuring greater comfort in the car. Most of the cars have hand brakes only, but on some air brakes are fitted as well. The front truck brakes are applied through a steel cable running from the steering arm and actuated from the wheel.

This Hetch Hetchy installation is worthy of study from many angles. Extending over nearly a decade and operating under such severe conditions yet with extreme satisfaction, it is a striking example of motor truck versatility.

In the six months ending September, 1921, the road operated these machines over 70,000 car-miles. For that period the average cost per mile, freight and passenger cars included, was 18.2 cents—this including all labor,

supplies, repairs and equipment. One of the lighter cars hung up a record of 12.9 cents per mile!

Railroad men have been doubtful of the success and safety of a single pair of wheels at the rear. If none of the other applications were considered, this one would show that such construction would operate with the greatest success for the two wheels drive all the load that can be carried up their long, steep grades and around sharp curves, while in the matter of trailing there has been nothing shown to warrant the prevalent fear of derailing. The passenger cars run at higher speeds and the rear wheels trail perfectly; some of the chassis have been lengthened to give more body space and this has created a wheelbase as long as 18 or 19 ft.

Other points well proven are the reliability of hand brakes, the durability of stock parts and the ease with which such equipment can be kept in good repair, the economy of lighter dead weight than is found in specially built cars and the flexibility of a fleet of single cars. The latter is a point on which the average railroad official must compromise. A Monday morning load on the Hetch Hetchy may require all nine cars to transport laborers and material, but an engineers' inspection trip during the week requires only the smallest car. In each case the expense is in proportion to the load and there is no running a 60-passenger car for a handful of men.

The use of comparatively small, moderate speed, four-cylinder engines is worthy of note in connection with recent agitation in favor of high speed engines of more than four cylinders. There is little doubt but that a proper selection of gear ratios, as on the H. H., will show the slower speed four-cylinder engine the more durable and economical.

A New Four-Wheel Braking System

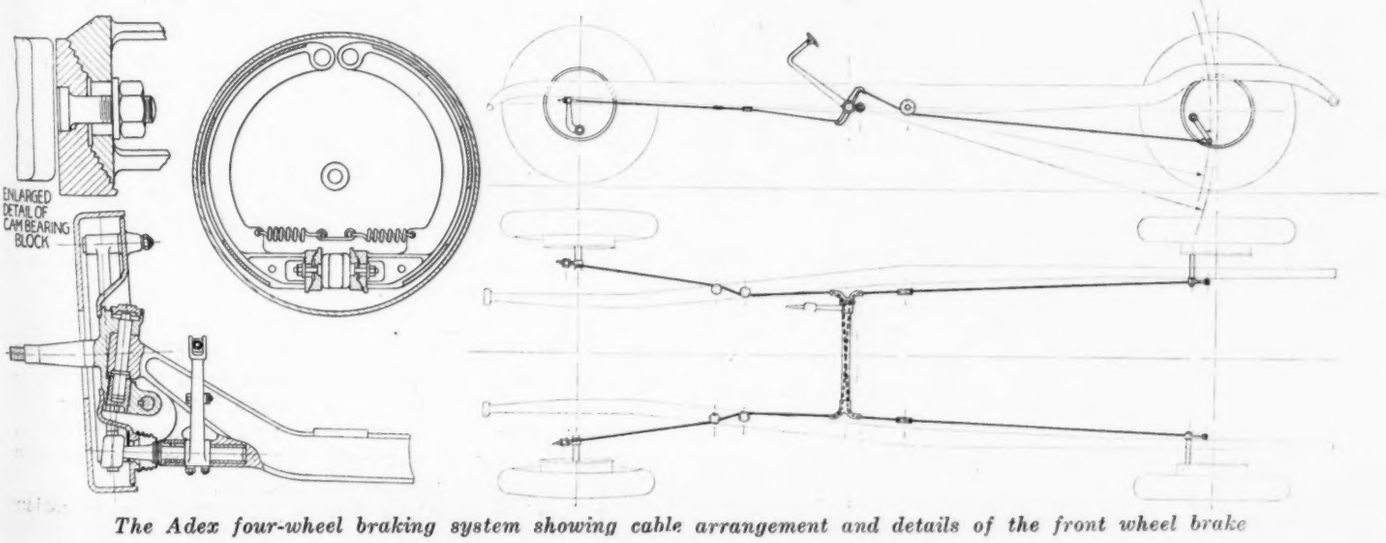
A FOUR-WHEEL braking system, developed by A. De Coninck, a Belgian engineer and known as the Adex system, has recently been introduced in this country by J. L. Chantemerle. According to the designer the system has been applied successfully on several European makes of chassis, including Voisin, Excelsior and Nagant.

As will be seen from the accompanying cut, the brake actuating cam is arranged with the center line of its face in the same plane as the axis of the steering pivot, this axis also being that of the cylindrical bearing surfaces of the cam. The shaft which carries the cam is mounted in bushings held rigidly in seats formed in the front axle and therefore moves with it.

It will be apparent that the change in position of the front wheels when the latter are moved in steering the car has, with this arrangement, no effect upon the operation of the front wheel brakes. The brake shoe faces against which the cam bears are made separate from the shoe and are therefore easily hardened. Furthermore, by the use of a stepped rear surface engaging with a similar surface on the brake shoe, the bearing blocks are made adjustable for wear. They are held in place by a bolt which is countersunk in the block and passes through an elongated hole in the brake shoe.

The brakes are actuated by a flexible steel cable attached to the brake arm carried between bearings on the camshaft. With this arrangement no universal joints or telescoping members are required. The working parts are inclosed in a manner similar to that employed on the conventional expanding type of brake. This type of front wheel brake is applicable whether the steering pivots are inclined or vertical.

One feature of the Adex system is the arrangement of the actuating cables. These are connected in such a way as to actuate the brakes on diagonally opposite wheels. In other words the left front and right rear brakes are connected by the same cable while the right front and left rear brakes are similarly connected. As will be seen from the diagram, the cables from the front wheel brakes pass to a pivoted tubular member on which the pedal is mounted. The cables pass through this tube and thence to the brake levers on the opposite rear wheels. At the ends of the tube are arms with segmental end grooves over which the cables pass. When the tube is turned on its axis by pressure on the pedal the cable is pulled taut and the brakes applied. Since the cable can slip through the tube the brakes are equalized and it is necessary to shorten the cable at one end only when it is desired to adjust the brakes. Should one cable break or one set of brakes fail for any reason, the other pair will still operate. The diagonal arrangement is also said to prevent skidding. The cable can be carried over pullies, if arranged to pass through the frame of the car, and the layout can readily be so made that the motion of the axles does not tend to apply the brakes.



The Adex four-wheel braking system showing cable arrangement and details of the front wheel brake

What the Pacific Coast Dealers Are Thinking About

Dealer associations growing in power. Co-operative effort gaining support. Discounts unsatisfactory. Greater contract protection desired. Object to subordinating local firm to car name in advertising. Coast price of cars causes difficulty.

By Gordon Lee *

TREATMENT which manufacturers give their dealers on the Pacific Coast in the next year or two will determine to how great an extent the vast potential sales possibilities of that territory will be developed. Dealers and distributors in that section do not have as close contact with their factories as do some of the middle western and eastern representatives. Consequently, the Far Westerners sometimes have difficulties and "kicks" concerning which the factory doesn't get first hand information.

Intimate conversation with hundreds of these dealers during the last few weeks revealed some interesting thoughts that are in their minds about the factories whose cars and trucks they are selling. In certain instances, the dealer may have the wrong angle. He may be basing his opinion upon personal desires which neglect a consideration of all the factors involved. In other cases, he is probably right and is pointing out a condition which should be remedied for the benefit of the manufacturer as well as himself.

The growing strength of dealer associations all through the West, and especially on the Pacific Coast, is an outstanding fact of present developments. Dealers, garage men, and service men are all getting together in this section. They see themselves as a part of a big family which must pull together for the best interests of all. They are talking things over with one another and are finding that others are having the same troubles as themselves and are having the same difficulties in finding suitable remedies.

The sentiment is growing rapidly that many dealers making united demands will have more chance of attaining their desires than one dealer fighting by himself. The possibilities of organized activity already have been demonstrated to them in certain local instances, and the spirit of co-operative action has become strong.

The present enthusiasm for organization and active dealer association work is caused partly because of certain grievances, real or fancied, which the dealers hold against manufacturers. It is undoubtedly true that the rapidly growing strength of the Pacific Coast dealer associations is due in some measure to the antagonism felt to certain current factory practices.

Pacific Coast dealers on the whole are not satisfied with their contracts. They feel in a general way that they are not given enough protection in view of the big investment in money and reputation which they have at stake in their business.

These dealers point out that nearly every car manufactured to-day has a high degree of mechanical excellence. Nearly all cars in the same price class will give reasonably good performance, so that minor changes in detailed construction or finish are no longer of much value from a sales standpoint. They contend that this fact makes the individual selling ability of the dealer a constantly increasing factor in determining the sales volume of any given car. The dealer is making his sales more and more on the basis of his individual reputation and integrity, his personal standing in the community, and his ability and desire to render adequate service after his cars have been sold.

The dealer must involve practically all of his financial resources, together with his personal reputation. His stake in his business and in the car he is selling is vital to his business existence. His individual existence as a dealer, however, is not vital to the factory, despite the fact that dealer co-operation, taking all the dealers together, is essential to factory success.

Thus, the Pacific Coast dealer feels in need of greater contract protection than he has been accorded in the past and he will seek by every means within his power to get it. The factory which meets him half-way in his attempt to get what he considers favorable terms will have more loyal and sales-producing dealers than will those factories which take action only under pressure.

Especially do the dealers object to the present rate of discounts which prevail. Most of these Pacific Coast dealers are doing business on a 20 per cent discount. They are strongly in favor of having that percentage increased to 30.

Knowledge of Territory

Most factory sales managers have a very meager knowledge of the territories in the West, according to these dealers. They do not generally recognize the great distances that have to be covered and the difficulties that face the distributer in getting about to all of his dealers. The story is told, for instance, of a factory sales manager who visited a distributer in Seattle recently.

The sales manager was bent on "getting the organization

*Chief, Automotive Division, Bureau of Foreign and Domestic Commerce.

pepped up." He said to the distributer, "Now let's drive over to Blank to-morrow morning and see the dealer over there. He hasn't been doing so well lately. We'll drop in and pep him up a little."

"Whada'yu mean 'drive over there to-morrow morning'?" the distributer replied. "It takes a day and a night to get there by train."

This was cited as a somewhat exaggerated example of what factory managers know about the necessities of some of their western territories.

Coming on top of this lack of consideration of territorial necessities, many Pacific Coast dealers object to the sales literature which is sent to them. This literature, designed to tell them how to sell the car, was characterized by one representative as "mostly bunk." One dealer claims to have received 22 pieces of sales literature from his factory in 4 days. The result was that he read scarcely any of it. Several dealers expressed a strenuous desire for "more information and less 'pep' in sales promotion literature."

Two main objections are made in connection with the price of cars on the coast. Nearly all the dealers strongly object to the practice of selling a car in California at the F.O.B. Detroit price plus freight, when the car has been assembled on the coast. This practice not only gives the manufacturer an extra profit without benefiting the dealer, but also makes selling a good bit more difficult.

Coast Prices of Cars

The other objection centers about the national advertising of the F.O.B. Detroit price, which is very far away from the price that a man actually has to pay for the car on the coast. The Pacific Coast dealers would like to have manufacturers use a Pacific Coast price in addition to the F.O.B. Detroit price in connection with any general advertising likely to reach buyers on the Coast. Such a practice would make selling considerably less difficult for the Coast dealers, many of them believe, since they have difficulty explaining price differences in many cases.

Pacific Coast dealers feel very strongly that their importance as a factor in making sales is growing at a rapid rate. They feel that the best way to increase sales for themselves and for the manufacturer is to build up their own business to a high standing in the community. For this reason, they object to being asked to spend much money for advertising which features the car exclusively and their own establishment only in a minor way. The stronger dealers, particularly, feel that they are doing as much to make their car a success as the car is doing to make them a success. They feel that ultimately the sales volume will be built up in proportion to the standing in the community of their organizations.

Individuality Big Factor

The dealers may not be entirely right in all of their contentions, as noted previously. It is certain, however, that they are sincere and that they believe there are great possibilities in co-operative effort. There is no question about the growing strength and enthusiasm of the dealer organizations on the Pacific Coast and in the Western States.

The potential power and ability of these associations is great. It can be directed into constructive sales building channels in such a way that it will aid the manufacturer materially. Or the dealers may utilize their power to force changes and policies within the industry. They will not hesitate to use their force in this way if necessary.

The policy of manufacturers in extending definite and specific co-operation to these Pacific Coast dealers during the next few years will have much to do with determining into which channel the potential power of these associations will flow. Manufacturers can utilize this growing power for constructive ends if they consider carefully the dealer problems in this section, get together with their representatives, and honestly try to solve the problems in a way designed to be of mutual benefit. The time to get the greatest benefits from "co-operation" is before circumstances compel co-operation.

Motor Boat and Airplane Exports Good

THE Automotive Division of the Department of Commerce reports a decrease in every classification of automotive exports in July, except motor boats and airplanes. There was, however, an increase in the unit values in all cases. Passenger car exports during July decreased 28.4 per cent in number and 24.4 per cent in value as compared with exports during June, 5600 having been exported at a value of $4,395,541. The unit value of $784 was an increase of $42. The lowest decrease was shown in exports of cars valued between $800 and $2000.

Motor trucks decreased 26.7 per cent in number and 6.9 per cent in value, exports having totaled 822 valued at $734,148 and the unit value having increased $192, the average value of trucks exported being $893. Here again, the smallest decrease was shown in medium-priced trucks or those from 1 to 2½-ton capacity. The unit value of the latter classification increased $487 and that of the trucks over 2½-tons capacity increased $635.

While the leading passenger car markets of the United States took decreased shipments, larger exports to several Latin American countries and New Zealand are in evidence. Brazil took 240 passenger cars valued at $201,179 during July as compared with 90 valued at $91,507 during the previous month. Argentina took 217 valued at $223,994 as compared with 113 valued at $96,128 and 652 valued at $382,726 were exported to Mexico against 563 valued at $369,531.

New Zealand received 140 valued at $99,893 as compared with 59 valued at $50,431.

Exports to Sweden fell to 70 cars valued at $76,406 as compared with 961 during June and 802 during May. The largest decrease was shown in shipments to Canada, only 891 cars having been exported to that country as compared with 1807 during June, Australia took 663 as compared with 816 and the United Kingdom took 523 as compared with 775.

Belgium was the leading truck market, having taken 170 trucks valued at $38,031 during June and 340 valued at $84,405 in July. Canada occupied second place with 117 trucks valued at $225,697 as compared with 156 valued at $250,626. Mexico was third with 105 valued at $45,880 against 135 valued at $65,546.

A BRITISH parts manufacturer advertises a transmission for light cars which weighs only about 34 pounds. It is made with either central or right hand control. This is a three speed and reverse gear and is probably the lightest gearset for stock cars ever produced.

Who Is Responsible for Most Automobile Accidents?

Recent New York statistics prove pedestrians at fault in majority of cases. Drivers to blame for 22 out of 213 fatal accidents on Manhattan Island in first 6 months of 1922. Children and old men usually victims. Better traffic regulation will help.

TRAFFIC accidents in congested centers are increasing to an alarming extent. This is a fact of vital interest to everyone in the automotive industry. It is responsible chiefly for periodic attempts to regulate more stringently the operators of motor vehicles. Real remedies are badly needed and the subject is one worthy of the most careful consideration.

The National Automobile Chamber of Commerce has undertaken a safety campaign under the direction of Edward S. Jordan and considerable valuable work has been done, but long and arduous educational effort must be exerted before anything tangible can be carried through. Municipal authorities are demanding in ever louder tones that something must be done to curb the "juggernauts of the streets" which leave "death and destruction" in their wake.

No one is any more eager than the great majority of motor vehicle operators for sane traffic regulations, which will make driving safer. Drivers who recklessly endanger the life and limb of pedestrians should have their licenses revoked and a jail term would be beneficial for some of them. They are just as much a menace to other drivers as they are to pedestrians.

There are comparatively few drivers, however, who sally forth with the feeling that if any one gets in their way it is the other fellow's fault and he must take the consequences. There are a few who have no more respect for human life than a gun man, but there also are clergymen who violate the regulations laid down for their conduct and exceed the speed limit. But when an occasional clergyman strays from the path of virtue the entire church is not condemned.

It is a fundamental of American justice that a man is innocent until he is proven guilty. But most attempts to regulate traffic and minimize danger seem to be based on the theory that the motorist is always to blame and that if he is regulated sufficiently accidents will cease. This is not true in any sense and statistics prove that it isn't.

The latest quasi-judicial body in New York to propose greater "safeguards" for traffic by more stringent regulations for the motor vehicle driver, is the August Grand Jury. It has sent various recommendations on this subject to the district attorney, the state motor vehicle department, the police and the magistrates' courts. One of its most striking recommendations is the following:

"We recommend that with applications for chauffeurs' and operators' licenses a physician's and oculist's certificate be filed, certifying to the general health, hearing and eyesight of the applicant and that licenses be granted only to those apparently possessing normal hearing and vision."

If this suggestion were enacted into law it undoubtedly would solve the entire problem. It would keep the lame, the halt and the blind off the driver's seat. The proposal opens up an interesting field of speculation, also. For example, how much would the factor of safety be increased if all applicants for licenses were forced to submit to the Binet test? Should licenses be revoked temporarily when young men become engaged, on the theory that they are likely to be nervous and fail to concentrate properly on the work of driving? Should not every driver be compelled to take with him an oculist and a physician every time he goes out, on the chance that he might get a cinder in his eye or suffer an attack of indigestion?

To back up its contentions the Grand Jury submits an impressive statistical table which proves nothing except that motor vehicle drivers were to blame for only 22 of the 213 fatal motor vehicle accidents in the Borough of Manhattan in the first six months of 1922. This statistical table follows:

How Killed	Fault of Driver	Fault of Victim	Crossing Between Streets	Other Known Causes	Unknown Causes	Stealing Ride
Struck, private car	4	16	24	2	17	..
Struck, taxicab	3	7	7	..	7	..
Struck, autobus	..	1	2	..	2	..
Struck, commercial car	8	27	31	..	28	1
Struck, motorcycle	..	..	..	..	1	..
Collision, street car	1	..	..	..	2	..
Collision, two motors	3	1	..	1	4	..
Collision, horse drawn	1	..	..	..	..	..
Collision, other	..	3	..	..	..	..
Miscellaneous	2	2	..	4	..	1
Totals	22	57	64	7	61	2

Miscellaneous includes killed boarding, alighting or riding in motors, skidding cases and overturning of cars.

Other known causes include blinding lights, trying to avoid collision, flushed streets, blown by wind into vehicle.

Criminal carelessness in a fatal motor vehicle accident constitutes manslaughter and it is to be assumed that the police or the district attorney's office made a complete investigation of all these accidents. Such being the case, it is evident that drivers were to blame, en-

tirely or in part, for only a little more than 10 per cent of these tragedies. In more than 25 per cent of the cases, it has been demonstrated, the victims were themselves at fault. Thirty per cent of the accidents were due to "crossing between streets," or "jay-walking." The "jay-walking" habit certainly is not promoted by the motorist.

This shocking list of accidents is a sad commentary on the complexities of modern life. It offers an unanswerable argument in support of the contention that something must be done to cut down street casualties. The automotive industry will admit this as readily as anyone.

But in the face of this ghastly table compiled by the Grand Jury why should the attempt to cut down the toll be made chiefly by further regulation of motor vehicle operators? Why not regulate pedestrians a little more closely? Why not make it a rule of law and equity that a person who "jay walks" does so at his own risk? Traffic is regulated at the more important crossings in the larger centers of population and motorists make no demur. They willingly concede that it is a necessary precaution.

When a traffic officer gives the "Go" signal, is not the motorist justified, however, in assuming that his road will be clear until he is stopped again by the upraised arm of the law?

It is significant that almost coincidentally with the presentment of the Grand Jury, the Health Department of New York made public an analysis of the annual deaths by accident on the city streets. These statistics show that in 1921 most of the victims were between the ages of 5 and 14, the period when children use the streets for play, and over 56, when the infirmities of advancing age decreases their ability to look out for themselves.

"It is evident from these figures," said the report, "that the pedestrians are largely responsible for accidents of this sort because they occurred during the period of life when, on the one hand, they are careless, and, on the other hand, when because of infirmities of age they are unable to cope with the inevitable dangers of street traffic.

"In commenting upon the increase in the number of fatal street accidents we much not lose sight of the fact that it has not kept pace with the increase in the number of vehicles using the streets. If the same ratio between accidents and vehicles obtained to-day as in previous years the fatalities would be many times greater, so that in reality a big saving of life has been effected through the regulation of traffic and the closing of streets for play during certain hours of the day.

"The big need in our city to-day is more playground space for children of the crowded neighborhoods. In such districts, while street traffic may be comparatively light, accidents are more numerous because of the throngs of children on the streets."

The Grand Jury also recognized the conclusions of the Health Department, up to a certain point, by recommending closer regulation of pedestrian traffic at street crossings, similar to that which prevails on Fifth Avenue, and that municipal buses discharge passengers at the curb lines instead of in the middle of the streets. Most of its proposals were directed at the motor vehicle, however, as is evidenced by the following:

That the Motor Vehicle Bureau of the State Tax Department should be more rigid and thorough in tests before granting owners and drivers licenses.

That the traffic regulations should be made more stringent and be more strictly enforced.

That an automatic device should be installed on all commercial vehicles limiting their speed to a reasonable degree.

That whenever possible jail sentences follow convictions for infractions of the law, instead of fines.

That the authorities having charge of traffic matters confer with similar officers of other localities with a view to effecting similarity of traffic regulations and the adoption of a uniform standard system of hand signaling by automotive vehicle operators.

With a full acceptance of their responsibility as users of the streets in which pedestrians have equal rights, the automotive industry and motorists in general should unite in a campaign of their own to cut down accidents. They should begin by agreeing to drive not only cautiously and courteously, but they should insist also upon the pedestrian accepting his share of responsibility and not risking his life by dashing across the street through moving traffic to save a few seconds of more or less valuable time.

Traffic regulation should be upon a reciprocal basis. It should not be assumed that the motor vehicle operator always is wrong. Sane regulation is wise and necessary, but the number of accidents will not be cut down materially by idiotic red tape, which will make it as difficult to get a driver's license as to pass a civil service examination for curator of a museum.

Motor Transportation Services in Uganda

AN extensive motor transport service for both passengers and freight is being operated by the Transport Department of the Uganda Protectorate, with headquarters at Kampala. Thirty-eight trucks of from 1½ to 2 ton capacity and two Guy tractors make up the equipment. Seven of the trucks are of American make, while the rest are entirely of British manufacture and consist of 25 Albion trucks, 3 Thornycroft, 2 Lacre, and 1 Commer. These trucks are available at Kampala, Entebbe, Jinja, and Masini for the conveyance of traffic over any suitable road, and regular routes are maintained, with rest houses along the way for white travelers. The longest distance covered is about 232 miles. All the vehicles are run on kerosene after being started with gasoline and are driven by native chauffeurs, trained by the Department. Passenger rates are 0.5 shilling per mile for white people (one shilling being equal to 22 cents, U. S. currency), 0.3 shilling per mile for Asiatics and 0.2 shilling for Africans.

Notice was given in the Uganda Official Gazette of June 30 that motor vehicles weighing more than 6 tons and imported after June 15 into Uganda would not be licensed under the Highways Ordinance of 1921. The cases of vehicles already ordered but not yet imported were to be considered separately.

Exports of Passenger Cars,

COUNTRIES	GASOLINE PASSENGER CARS						GASOLINE			
	Up to $800		$800 to $2000		$2000 and over		1 ton and under		Over 1 to 2½ tons	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Europe										
Austria	6	$2,386					1	$404		
Azores and Madeira Islands										
Belgium	472	160,048	39	$42,880	11	$30,580	170	38,031		
Bulgaria										
Czechoslovakia	14	5,947					2	1,000		
Denmark	51	21,871	13	15,531	3	8,993	17	4,061		
Esthonia			1	1,013						
Finland										
France	68	34,359	11	12,158	6	20,875	1	217		
Germany	1	484	3	3,895	1	2,850				
Gibraltar			1	1,518						
Greece	6	2,033			2	5,384	2	808		
Hungary	1	414								
Iceland and Faroe Islands										
Italy	1	700	1	1,000	3	7,901				
Malta, Gozo and Cypress Islands	3	1,084	2	2,007					1	$1,200
Netherlands	45	29,982	21	22,483	11	34,521			2	1,614
Norway	5	1,800	5	6,864			2	483		
Poland and Danzig										
Portugal	2	836	11	12,124			1	500		
Roumania					2	5,384				
Russia in Europe	90	37,296								
Spain	62	28,122	32	35,017	2	6,562				
Sweden	17	9,498	50	58,832	3	8,076				
Switzerland	10	4,880	6	11,012	5	12,284				
Turkey in Europe	23	9,425	2	2,548						
Ukraine							2	1,500		
England	300	189,809	191	205,039	22	63,013			49	71,973
Scotland			4	3,870						
Ireland	4	1,450	2	2,950						
Yugoslavia, Albania, etc.	6	2,727	1	1,025						
North and South America										
British Honduras										
Canada	476	286,077	377	436,221	38	116,583	33	22,028	48	75,892
Costa Rica										
Guatemala	5	3,750	5	6,019						
Honduras	1	300	3	3,245						
Nicaragua										
Panama	4	1,713	3	3,100						
Salvador			3	2,731	1	2,011				
Mexico	507	208,320	133	146,241	12	28,165	95	32,156	8	11,724
Newfoundland and Labrador	1	790	2	2,124						
Barbados							2	4,000		
Jamaica	11	6,333	1	1,300			6	2,424		
Trinidad and Tobago	7	3,872	5	5,242			5	2,020		
Other British West Indies	7	2,593					3	1,380	13	12,246
Cuba	102	40,709	8	10,667	7	17,925	26	8,971		
Dominican Republic	23	9,285	5	7,014	1	2,810	8	3,232	2	3,597
Dutch West Indies	7	3,312								
French West Indies										
Haiti	3	1,278	1	2,000					2	4,075
Virgin Islands of U. S.	2	608					1	345		
Argentina	112	77,748	95	120,698	10	25,518			1	820
Bolivia					1	2,692				
Brazil	124	41,911	100	113,679	16	45,589	40	9,557		
Chile	23	8,730	4	4,891	1	2,155	6	2,760	3	2,989
Colombia	6	2,146	2	3,500					1	871
Ecuador			1	975			3	4,230		
British Guiana	14	6,491	1	1,000						
Dutch Guiana	5	2,200	1	980			2	880		
Peru	3	1,590			2	6,140	18	7,272		
Uruguay	25	14,090	6	6,618	1	2,685				
Venezuela	11	5,945	10	12,182	4	9,518	3	1,212	1	3,910
Asia										
Aden	3	1,815								
Ceylon	11	5,450							1	2,400
China	19	12,795	10	11,378			2	1,000		
Chosen										
Kwantung										
British India	115	71,368	61	69,969			1	800	6	7,193
Straits Settlements	10	5,340	6	5,637						
Java and Madura	50	36,200	15	16,441	1	2,300				
Other Dutch East Indies			1	1,010						
French Indo China	10	3,658	1	919						
Hejaz, Arabia and Mesopotamia										
Far Eastern Republic										
Hongkong										
Japan	77	28,572	14	18,351	3	12,000	75	30,300	12	37,198
Palestine and Syria	57	25,265	25	28,120			1	750	1	2,800
Persia	26	9,317								
Philippine Islands	26	10,900	10	9,915	2	6,447				
Greece in Asia										
Turkey in Asia	1	500								
Siam										
Oceania										
Australia	282	168,651	361	391,800	20	45,773	5	9,311	18	20,042
New Zealand	103	63,925	37	35,968			2	1,515	6	14,013
Other British Oceania										
French Oceania	2	708					1	590		
Other Oceania	1	837								
Africa										
Belgian Congo	6	1,958					8	2,752		
British West Africa			17	22,209					11	13,633
British South Africa	37	26,116	115	124,442	4	11,436				
British East Africa	12	8,688								
Canary Islands	4	2,040	2	1,904						
Algeria and Tunis										
Other French Africa	2	1,448					2	808		
Egypt	39	15,291								
Portuguese East Africa	1	484								
Other Portuguese Africa	8	2,707					6	2,424		
Total	3,568	$1,778,995	1,837	$2,070,316	195	$546,230	552	$199,721	186	$288,190

Trucks and Tires for July, 1922.

TRUCKS Over 2½ tons		PARTS	ELECTRIC CARS AND TRUCKS		TIRES						COUNTRIES
					Casings		Inner		Solid		
No.	Value	Value	No.	Value	No.	Value	No.	Value	No.	Value	
											Europe
					40	$654	48	$110			Austria
		$12,019			668	8,596	137	288			Azores and Madeira Islands
											Belgium
		25									Bulgaria
		221,145			4,917	67,043	3,745	7,634	30	$992	Czechoslovakia
											Denmark
		248			103	1,905	46	86			Esthonia
		242,101			3,111	25,060	1,570	4,308			Finland
		106			32	901	32	95			France
		430			792	7,533	162	371			Germany
		1,728			255	3,203	265	515			Gibraltar
											Greece
		1,573			28	425	24	90			Hungary
		24,551			806	13,467	423	741			Iceland and Faroe Islands
		1,305			222	2,856	96	181			Italy
		8,932			1,806	28,288	1,290	2,181			Malta, Gozo and Cypress Islands
		7,176			1,137	23,107	879	2,035	14	678	Netherlands
		504			56	714	130	421			Norway
		4,821			427	7,396					Poland and Danzig
											Portugal
		100			90	838	90	108			Roumania
		28,254			2,264	30,574	1,925	3,244	113	3,596	Russia in Europe
		16,175			3,427	62,274	3,101	8,008	55	1,103	Spain
		825			404	5,406	400	885			Sweden
		3,921			334	4,675	4	12			Switzerland
		3,136									Turkey in Europe
		207,103			39,299	345,936	40,082	50,172	607	11,441	Ukraine
		440			205	2,433	109	160			England
		12,228			576	8,959	505	1,195			Scotland
		160			236	4,264	224	497			Ireland
											Yugoslavia, Albania, etc.
		242			27	211	30	53			North and South America
46	$127,777	1,522,057	2	$3,018	4,050	54,166	5,629	8,150	257	13,075	British Honduras
		1,015									Canada
		1,861			349	7,999	144	455			Costa Rica
		2,996			47	1,420	92	228	42	752	Guatemala
		68			28	631	26	75			Honduras
		5,943			542	6,767	104	205	10	292	Nicaragua
		1,294			98	2,451	318	828	32	1,265	Panama
2	2,000	63,603			6,655	70,645	5,780	10,124	80	2,404	Salvador
		1,653			235	3,088	158	295			Mexico
		1,210			75	979	78	134	3	59	Newfoundland and Labrador
1	150	6,198			402	5,098	406	591	82	2,227	Barbados
		3,425			273	4,140	288	574	32	710	Jamaica
		2,071			48	392	13	35			Trinidad and Tobago
		46,247			8,160	93,058	8,926	16,792	512	13,959	Other British West Indies
		5,906			401	7,272	780	2,306	33	417	Cuba
		948			170	1,829	192	286	2	38	Dominican Republic
		1,453			266	3,101	213	446	6	103	Dutch West Indies
		3,469			111	1,667	4	10			French West Indies
		278			52	593	266	414	4	52	Haiti
1	4,200	26,673			6,859	72,235	3,356	5,030	40	2,060	Virgin Islands of U. S.
		48			148	3,306	100	213			Argentina
18	57,358	37,996			2,838	35,954	1,145	1,932	148	2,716	Bolivia
1	3,342	6,887			673	9,906	309	631	22	900	Brazil
		6,144			390	7,879	828	1,217	5	160	Chile
1	5,350	2,844			66	1,144			2	46	Colombia
		1,483			30	575	60	96			Ecuador
		813			30	267	72	74			British Guiana
2	9,800	10,367			1,375	20,911	1,169	2,397	17	429	Dutch Guiana
		8,008			1,776	23,736	580	1,065			Peru
		8,167			842	12,052	1,139	2,229	8	134	Uruguay
											Venezuela
		221			195	2,103	10	12	4	60	Asia
		1,374			24	544			2	80	Aden
		6,818			384	5,749	254	523	22	378	Ceylon
					246	1,376	284	852			China
		1,750									Chosen
		31,958			1,163	18,402	177	429	384	7,563	Kwantung
		8,893			453	4,655	687	1,065	38	928	British India
		13,646			3,019	39,323	1,683	3,470	87	2,545	Straits Settlements
		1,750									Java and Madura
		64			115	1,527	84	179			Other Dutch East Indies
		5,141			140	1,393					French Indo China
		44									Hejaz, Arabia and Mesopotamia
		1,024			65	1,514	107	267	25	752	Far Eastern Republic
4	6,368	21,035	26	31,870	437	7,525	149	345			Hongkong
		11,456			926	10,472	967	1,537	4	70	Japan
		1,662									Palestine and Syria
		6,382			3,879	61,739	5,800	9,655	249	7,080	Persia
		20			4	93	8	21			Philippine Islands
							60	119			Greece in Asia
		234			40	442					Turkey in Asia
											Siam
15	21,772	44,843			1,445	22,285	1,314	2,919	265	7,740	Oceania
3	8,120	31,159			5,305	68,820	2,176	4,695	163	4,848	Australia
		362			32	474			6	95	New Zealand
		1,327			57	852	12	28			Other British Oceania
		1,196			53	868	42	74	2	32	French Oceania
											Other Oceania
		128									Africa
		7,201			282	4,924	560	1,039			Belgian Congo
		32,184			3,495	33,190	960	1,684	14	387	British West Africa
		1,764	1	1,046	395	4,953	235	448			British South Africa
		8,097			52	515	50	88			British East Africa
											Canary Islands
		57			45	697	38	69			Algeria and Tunis
		3,089			792	6,506	560	1,113	4	70	Other French Africa
		83			24	587	72	270			Egypt
											Portuguese East Africa
											Other Portuguese Africa
84	$246,237	$2,825,335	29	$35,934	121,318	$1,417,507	103,772	$171,123	$3,425	$92,236	

Wage Systems and Production Costs

Milwaukee plan provides for increased base rate after a certain point of efficiency has been reached. In contrast to practice of cutting rates when earnings pass given value. Production costs have been cut by method described; workers satisfied.

By Harry Tipper

MANY difficulties in industry would be solved if it were possible to avoid arbitrary reductions of wages or long drawn out fights for increase of wages. So long as all members of a group of employees are paid by time only, however, and their pay has no relation to the production costs, wages will bear an unsatisfactory relation to the cost of production on the one hand and the cost of living of the workers on the other. It is not surprising, therefore, to find a great deal of discussion of wage systems occurring from time to time and many suggestions for change.

In the metal trades field the work of Taylor, Gantt and other industrial engineers has improved the situation in many plants. The original bonus systems, as first adopted, presented a good many difficulties and many of the bonus systems still employed are too intricate for the best results.

All these bonus systems, however, are based on a reward for the amount of production in addition to the minimum rate per day which is considered necessary for all employees. To that extent, they bring the wages more into line with the production possibilities and co-ordinate the cost of the production with the market requirements.

It is not sufficient, however, to enable the worker to earn more money. It must be possible, at the same time, to reduce the production cost to some extent in order that the total manufacturing expense may be lowered without reducing the purchasing power of the individual.

One of the plans adopted was indicated in the story of the Delco factory in a recent issue of AUTOMOTIVE INDUSTRIES. William Baum, industrial engineer of Milwaukee, has worked out a somewhat different plan which has been used in a plant employing approximately 2000 people in that city, with very excellent results. The effect of the operation of this plan was to increase the production and to reduce to some extent the cost per unit of production, while avoiding the necessity for the reduction in wage rates from the 1920 scale. The plan itself includes:

1. A minimum rate guaranteed to each worker irrespective of production. This minimum rate is used as a basis upon which the gain-sharing plan is operated. It is, however, an unusual provision because where the efficiency is increased to a predetermined point, the hourly base rate is automatically raised. This plan is directly the opposite of the tendency to cut prices as the efficiency increases. It is interesting because many manufacturers are still under the impression that they cannot afford to pay an individual worker more than a certain amount for his day's work, regardless of production. This plan considers it possible to pay an individual worker an increased hourly rate in addition to the premium as the production increases.

The plant in which this job was examined was a textile plant and, consequently, the operations are not of interest to the automotive manufacturer. However, the elements included in the plan are interesting.

2. The second point in the scheme is the creation of a standard time unit for each operation. The saving of time between a standard time unit and the operative's time is divided equally between the company and the worker. Thus, if the operative saves 1/3 of the standard time, the saving accruing is 1/6 to the company and 1/6 to the operative. The system itself is based upon the Kelsey Premium Plan and the Taylor Differential Piece Rate Plan, and provides both a premium on larger production and a higher basic classification for operators. The standard time unit includes an allowance for fatigue, for unavoidable delays and for imperfect work from preceding operations.

Allowance for Delays

No allowances are made for delays or inefficiencies under the control of the operator concerned. The time studies themselves are made with the purpose of considering the manual motions and the machine time necessary. These readings are taken with a stop-watch as in the usual practice, but the time study man is expected to make observations upon the fatigue and the delay necessary to recuperate from this, as well as other delays which may have been included in the allowance for time.

The studies are made with three kinds of workers—the average type, the extremely good and the sub-average. Any changes in the plan are made in co-operation with the employees wherever possible. This element of the time study could be emphasized a little more fully because of the means of a thorough understanding on the part of the operator and a sympathy with the object of the work.

Individual and group records are used to show the individual relation between earnings and production and to indicate the progress of the group under a foreman or a sub-foreman.

These records also suggest possible causes for low earnings and low production by showing machine idleness, delays on account of material and delays which may be due to fatigue or the surrounding conditions of the work.

Of course, these records are most valuable in determining the relative progress of the individual so that slow workers may be transferred to operations for which they are more definitely fitted and those who are not worth while can be weeded out.

The adoption of the plan was preceded by group meetings of workers in the different departments in order that the plan might be thoroughly understood, and instructions to small groups given to enable the operators to figure their own pay.

This last point needs a little emphasis. The operators should be able to figure their own pay on any bonus plan and figure it easily if the full effects of the bonus plan are to be fulfilled. Workers are not likely to view with confidence any system of wage payment which it is difficult for them to understand.

They want to be able to figure their own pay and they are entitled to work with a system that is thoroughly understood by them, the operations of which are entirely familiar.

This plan, like the Delco plan previously considered, guarantees a minimum rate below which it is not wise to go in providing a reasonably efficient organization of workers in the factory. Nothing is said in the details of this plan regarding the payment of the standard rate for idle time beyond the ordinary delays figured which the time study has taken care of in the regular operations of the system itself.

Where delays seriously interfere with the possible production, and therefore with the earnings of an operator, justice demands that the operator should be paid on a standard basis during the idle time caused by that delay, unless the delay is due to the errors of the operative concerned. In the Delco organization the payment of standard time wages under such conditions wipes out the last possible objection to such a system of piece work payment in a plant where the work of each individual depends upon the smooth operation of the whole organization.

The application of this sort of plan to any factory is a matter of patient analysis and study from the engineering standpoint, careful observation, readings in the time and motion studies, and a thorough understanding of human affairs in dealing with the operatives. The important results are included in the simple statement of high wages, increased production and lower production costs.

This examination of the wage system for the direct labor in the factory leaves out of account entirely the large amount of factory labor which is not directly a part of the operations of manufacture and is usually classified in factory overhead. It is not unusual to find the direct labor in the factory figured out in five decimal places so that exact costs can be determined in advance in connection with any job demanding certain operations and certain tooling. Very frequently, however, the overhead costs cannot be determined for a particular job in less than units, although the overhead costs in the factory frequently reach twice the total of the direct labor.

Comparatively little engineering work has been done in the examination of methods by which the factory overhead costs can be brought into their proper relation to production.

These factory overhead costs vary between factories even more largely than the direct labor and less information is available as to the causes of these variations.

A large amount of work can be done in this direction, however. This is indicated by the case of one factory where the consideration of the overhead costs was almost entirely responsible for turning the factory from a losing proposition at maximum production to a money-making proposition at 80 per cent production.

Plans like the one described in this article develop the fact that reduction of wages is not necessarily a part of the reduction of market prices nor is it necessary to a reduction in the cost of producing. The cost of the direct labor per unit of production grows out of the relation between the equipment, the working conditions, the efficiency of the worker and the rate of pay per hour or per day. Some day we shall learn very thoroughly that the greatest period of prosperity and accumulation of wealth is not necessarily a period of rising prices but a period of greatest efficiency in production and marketing, and may very easily be a period of highest earnings. In the meantime instances multiply where manufacturers have been able to maintain high wages, lower cost of production and increase efficiency of that production, as far as direct labor is concerned.

Market for Tires on the Edge of Mongolia

THERE is a fair market in the Kalgan, China, district for tires and tubes, according to Consul Sokobin. There are not more than 40 cars operating at present in this district, but as nearly all are engaged in carrying passengers between Kalgan and Urga, a distance of 700 miles, the number of tires and tubes used by these cars is equivalent perhaps to the number used by 400 cars in cities in America or China where the streets and roads are paved. The road between Kalgan and Urga, which is the capital of Mongolia, is a natural road, no part of which has been constructed; it is the old camel caravan route between China and Siberia. There are very bad sections of ragged rock, sand, and gravel, and there are some good stretches of dirt road over a grassy plain.

The cars usually carry five passengers, but some times six and seven are carried in a five-passenger touring car, together with 40 lb. of baggage for each passenger and five to seven cases of gasoline. The entire gasoline supply for the trip must be carried from Kalgan or a point not far from Kalgan, and as a result the cars are usually overloaded; this fact, together with the nature of the road, causes rapid destruction of even the very best tires and tubes.

There are five German Benz buses now used between Lima and the suburb of Miraflores, and according to the automotive section of La Prensa it is understood that fifteen more have been ordered with the proposal of extending the bus service to other suburbs in the vicinity.

Assistant Trade Commissioner Turner, Lima, states that these buses have a seating capacity of forty, twenty in each deck, and will charge a fare only a little in excess of that charged by the trolley lines and consequently will cause considerable competition with the street railways.

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Movies Help Motorists

THE automobile business is going to get some constructive assistance from the motion pictures. Everything that tends to make driving more pleasant and economical decreases sales resistance. Thus manufacturers will be interested to know that "Topics of the Day" Films is beginning a campaign for "Fair-Play on the Highways."

The campaign is beginning with a plea to towns all over the country to play fair with the automobile stranger within their gates. Here is the first message that is going to be shown in three thousand theaters:

> Many rural communities are having their advancement retarded by the attitude of their officials toward transient motorists. Abandon the idea that every automobilist is to be milked, mulcted and bilked to supply fees for justices and constables, and amusement for court (?) loafers. It's a detriment to local business men.
>
> Harassing the automobilist drives potential investment away.
>
> Every community owes its growth to the outsiders who visited it. Close your town to visitors and you die of dry rot.—"Topics of the Day" Film, 1562 Broadway, N. Y.

Suggestions are desired for future parts of the campaign. The automotive manufacturer has a chance to enlist the aid of a powerful publicity agency in a cause of vital interest to the industry. The usefulness of highways to the community, the amount of local business brought by tourists, and courtesy on the highway are just a few of the topics which might be used in the future.

Accessory Sets

ACCESSORY manufacturers might increase the size of their unit sales by working out standard sets, comprising a certain number of each of their models, and then marketing the set to the dealer. A visor manufacturer, for instance, makes some twenty-five different models, each one designed to fit on a particular make of car. Usually he will just take the dealer's order for whatever number of each type the dealer may happen to specify. Some types will sell very infrequently.

Suppose he worked out with some degree of accuracy, however, the number of visors for each make of car that the dealer might reasonably expect to sell. If such a proportion were once worked out, it could be applied to the registration figures in any given territory and thus provide a basis for a dealer order.

The car and truck manufacturers have done something similar to this in determining how many units of each spare part should go to the dealer for every complete car which he sells. This has been done with considerable success in many cases.

The advantage of such a practice to the accessory manufacturer is threefold. First, he has a larger unit to merchandise. Thus the selling cost is reduced. Book publishers, for instance, can sell a $10 set of ten books at less merchandising cost than they can sell ten $1 books separately.

Second, he sells the units which the dealer is most likely to need, and thus makes a favorable reception for future sales effort.

Third, he will probably increase the volume of total sales.

Durability of Good Appearance

AS engineering progress makes possible only minor changes in design and construction of motor vehicles, the factor of appearance and the durability of that appearance will play an increasing part in selling. It will not be sufficient to obtain better appearance through increased cost, as the trend of value per dollar will be constantly upward. But better and more sustained appearance will be demanded.

Some service kicks get back to the factory more rapidly than others. The premature wearing out of upholstery, appointments, or paint does not come as forcibly nor as rapidly to the attention of the dealer

and the factory as do engine and chassis troubles which prevent the car from actually operating. Dissatisfaction on these points exists, nevertheless, and act as sales resistants.

There are some paint jobs, for instance, which stand up for only a few months after getting into the owner's hands. The failure may be due to any one of a number of factors, but often comes through a desire to dry too quickly and hasten production. If a manufacturer were to give particular attention to his painting problems, for example, making it possible to guarantee a finish without cracking for twelve months, he would have a talking point for his car that would weigh heavily in the minds of prospective purchasers.

The increased proportion of closed cars is making this matter of painting and general appearance of greater importance every season. The far-seeing merchandiser will give special attention to these matters long before the reaction from the public becomes so strong as to necessitate such procedure.

More Radical Changes in Engine Design

THE recent announcements that all of the new London buses would be equipped with the Argyle type of sleeve valve engine has awakened considerable interest in this country.

It is quite generally conceded that 4000 r.p.m. is about the maximum speed at which it is practicable to use the ordinary spring operated type of poppet valve. If engines are to run at higher speeds it will probably be necessary to turn to some other type of valve actuation.

We have recently been permitted to view a highly developed, air-cooled, non-poppet engine capable of running at extremely high speed. Mean effective pressures considerably above those common in current water-cooled types are said to be developed and it is not outside the bounds of possibility that this engine will be in production by a prominent manufacturer before next spring.

It may be of interest to know that the sample engine which has been constructed incorporates not only aluminum pistons and aluminum connecting rods, but will probably also have an aluminum block, probably with an iron or semi-steel sleeve.

Developments of this kind indicate that the future of automotive apparatus in this country is not necessarily completely tied up with the poppet valve engine. The endeavor to secure a high output from a unit of small dimensions acts as a constant spur to engineers to develop something new. Much of this research extends back all the way into pure science. For instance, in one well-known laboratory, the resistance of certain colors to heat flow is being studied with the possibility that coloring the combustion chamber will cause heat to be retained and less conducted to the water jacket.

In spite of the fact that in all of the new models announced so far this year or which will probably be announced during the remainder of the year, the changes are only of a detail nature. Nevertheless, there is considerable activity in the field of new development and even of radical adventure into new fields of engine design.

Recent laboratory investigations which have been made both in this country and abroad have resulted in a greater knowledge of the fundamentals of chemistry and physics involved in the functioning of an internal combustion engine. It is probable that some of these facts can be turned to practical use. Important changes do not come rapidly. Considerable time has elapsed, for instance, since the first experiments were started on the forging of aluminum and it is only recently that the forged aluminum connecting rod is beginning to be used as standard equipment in certain passenger car engines.

The automotive engineer is a restless individual who is not content with present day developments, but who believes that it is possible to materially improve existing apparatus. One result of this restlessness is likely to be a most interesting phase of development during the next few years. There are already a number of signs which indicate that we are in for material advances, particularly as regards greater power output from small units, due largely to materially higher rotative speeds than those to which we have been accustomed and to the use of lighter materials which are, nevertheless, capable of standing up under extremely high stresses.

The Industry Supports Commercial Aviation

THE interest of automotive executives in commercial aviation is strikingly illustrated by the prominent part taken by automobile companies in supporting the recently established flying boat service between Detroit and Cleveland. This service was established on July 14, 1922, by the Aeromarine Airways, Inc. Two trips are made each day from each city. The flying time is 90 minutes as opposed to more than five hours required by rail.

General Motors, Hudson, Packard, Maxwell, Timken, and Ford are those mentioned as watching the service with interest in Detroit, while Peerless, Goodrich and Goodyear are said to have participated in the movement to establish the line and foster its progress from Cleveland.

Thus far the service has been regular. It is operating on schedule just as do the railroad trains. A continuance of regularity and safety will aid materially in developing confidence in commercial flying. This line is of special interest because it has more of a commercial character than most other similar attempts in this country. It runs between two big business centers and has the direct interest and support of the Chamber of Commerce.

The automotive industry can well afford to take an active interest in the development of commercial aviation. It is more closely allied to this new field than any other established industry and by aiding development will profit itself as well as other business interests.

No Great Decline in Sales Expected

Indications Are for Normal Fall—Factory Expansion Program Under Way

NEW YORK, Sept. 18 — For the fourth time this year the automotive industry established a new record in the production of passenger cars and trucks, the output for August being 272,000, an increase of 12 per cent over the previous month and a gain of 53 per cent over August of last year. It closely approached the mark made in June, which thus far has been the banner month in the industry.

Production Unhampered

In view of the consistently strong demand followed during the preceding months, it would not be surprising if a delayed seasonal falling off in sales came in September which, with the aftermath of the rail and coal strikes, would result in a slight curtailment of manufacturing schedules. So far neither strike has interfered with production activities. Manufacturers have adhered scrupulously to their policy, announced earlier in the year, that production would be governed solely by consumption.

The decline in sales usually experienced at this season has not been apparent except in isolated instances and has not been such as to lead to the conclusion that any general halt to the buying movement is imminent. To the contrary, the falling off in sales in these few cases during August has been more than offset by gains elsewhere.

Count on Farmer Sales

There are many reasons for believing that should a lessened demand come it will be relatively slight. Not the least is the feeling that the agricultural districts, under the impetus of a bumper harvest, will enter the market more aggressively than in the past and become an active purchaser of both passenger cars and trucks.

Improved business conditions, higher wages to labor and the anticipation of good crops have already had their reflection in the demand for motor vehicles. They lead to the conviction that the rest of the year will be normal, at least, with a strong probability that it will not fall very far behind the general average for the first eight months. In that period the total production was 1,671,418, as against 1,668,550 for the entire year of 1921.

Every indication is that next year will see an even greater output. Anticipating such a condition, manufacturers have started an extensive enlargement of their manufacturing facilities. While such additions, in many cases, will be used to meet the increased demand for closed body types of cars, they will also be able to take care of the prospective demand for both open and closed models.

Business in Brief

NEW YORK, Sept. 16—The settlement of the coal strike, the improvement in the rail situation and better conditions in the agricultural areas have combined to impart a more optimistic note to trade and industrial circles and act as a strong impetus to renewed buying.

Assurance of a coal supply has been the dominant factor in stimulating industry and bringing it back to the pre-August level. There still remain, however, the difficulties to be encountered through the somewhat retarding effect of the rail strike and the apparent settlement at a time when cars will be in great demand for moving the harvest.

The bumper American farm crop will be augmented by a record-breaking yield in the Canadian fields. More rain and cooler weather have had very noticeable and salutary effects.

Wholesale and jobbing trade has shown a marked gain in many cities, with a better feeling noted, also, with retailers. The buying movement, which appeared to have suffered a set-back, now seems to have resumed with some of its old-time earnestness.

The iron and steel industry are showing recovery and are making progress with more confidence. Many central-western furnaces have resumed operations, and the outlook for steel supplies has been aided by the increase in mill capacity since the first of the month.

There has been a greater demand for coke, indicating an eagerness on the part of iron and steel makers to return to full speed in their operations.

Building operations assumed large proportions in August, with a strong tendency to maintain the high level established through September.

The end of the tariff discussion has had the effect of causing to be withdrawn from bond much of the wool supply.

Bank clearings have shown a further expansion, a gain of 14 per cent being evident over the previous week.

Ford Secures Coal; Will Reopen Plants

Price Changes and New Models Indefinite, Depending on Future Conditions

BULLETIN

DETROIT, Sept. 21—Ford Motor Co. will resume work to-morrow in all plants and expects to be back to a normal operating basis within ten days. Because of the detail involved in re-enrolling its former workmen it will be several days before a full working force can be restored. As fast as men can be handled the work of opening the factory will go forward. The opening is declared due to the satisfactory arrangements the company has been able to make on coal deliveries from its mine fields and from operators in the Kentucky and West Virginia fields.

DETROIT, Sept. 16.—The Ford Motor Co. factories closed to-day for an indefinite period. Approximately 70,000 men employed in the Ford factories at Highland Park, River Rouge and the Lincoln plant were dismissed with no word as to when work might be resumed.

No official statement has been made by the company, but recent conferences of executives would indicate that steel prices rather than coal have principally influenced the closing. Thousands of workmen in other factories making parts and materials for the Ford company will be affected. Few other factories in the Detroit district serve the Ford company alone, so that operations will be maintained in most other plants but on a greatly reduced scale. Body, wheel, tire, parts and other accessory manufacturers for the company will make big curtailments in operation.

Orders Carried Over

In going into the closed down period, the company declares that it is carrying a considerable number of orders over. Denial was made that the closing was because of business falling off appreciably, but on the contrary that orders would warrant a continuance of heavy operation. A sufficient stock of parts has been accumulated to carry over the servicing of all cars until factory operation is resumed.

In the case of the Lincoln company, orders are known to have been on hand to cover several more months of operation without new orders being received. Some material suppliers report that they had been notified that the closing was for two weeks but others said no notice of any kind had been received.

Branch managers from all parts of the country have been in conference with the sales department for the past two weeks, the purpose of which, however, was said to be to obtain a check on the

(*Continued on page* 595)

Milwaukee Plants Rushed by Demand

Immediate Problem of Strike Less Severe—Production and Sales Maintained

MILWAUKEE, WIS., Sept. 18—While rail transportation and fuel problems continue to trouble the minds of the automotive industries, this concern is more a matter of the semi-distant future, for at this time some improvement is discernible in relation to both problems. Local automotive shops of all classes have a satisfactory amount of business on the books to make production according to schedules demanded by buyers more important than getting more business.

Although some concerns have made provision for the use of fuel oil in case coal and coke supplies should run out, the majority now feel that the situation has been relieved so far, and prospects for further relief are so good, that emergency methods are merely under consideration.

More Coal Moving

More coal was received at Milwaukee in the week ended Sept. 16 than at any time since the coal strike started. Nevertheless, total receipts so far in the 1922 season of Great Lakes navigation are still far below normal, and it seems physically impossible to bring enough fuel to Milwaukee for distribution to the Northwest by the end of navigation about Dec. 1 to meet all requirements during the coming winter.

Manufacturers of engines, frames and other important units for motor truck manufacturers report that sales are increasing slowly but steadily, and while nothing spectacular is expected to develop before next spring, they are in a more satisfactory position than in more than two years.

Passenger car manufacturers are buying parts and equipment steadily, and those with term contracts are directing deliveries at least according to order schedules, with some asking larger quantities up to the ability of the parts makers to produce and deliver.

Agricultural implement and machinery shops, including tractor builders, are making good headway, and while their purchases are not yet of consequence, the prospects are regarded as distinctly favorable for the next six to eight months.

Retail Sales

Retail sales of passenger cars in Milwaukee, as analyzed by several representative dealers, have held up remarkably well so far in September, and while it would be unfair to compare actual transactions in number with those in April, May, June or July, the state of trade is said to be eminently satisfactory. A distinctly better feeling exists now than in July or August, in which months there was an inclination among prospects to hold off to await the outcome of the railroad and coal strikes and anxiety over the effect of these troubles on business generally during the winter months.

Dealer trade has an aspect of briskness, due to the fact that while current sales are not so heavy as last spring and summer, shipments from factories on orders booked in the last 30 to 60 days are now coming through, enabling dealers to place cars in hands of purchasers. This affects enclosed types largely, although some dealers encountered considerable delay in delivering roadster and touring models promptly.

Industrial Situation Does Not Warrant Tying Up Capital in Finished Products

By C. H. QUIRK,

Sales Manager of the Detroit Carrier & Mfg. Co.

Detroit, Sept. 18.

IN view of the menace of the railway situation during the winter months, it has become a matter of extreme importance to the industry to be fully prepared to meet the emergency in whatever manner may be necessary.

Developments of the past few weeks would indicate that it is only a matter of a short time when we will be unable to expect any definite service from the railroads, either as to deliveries of materials or the availability of cars to meet shipping requirements.

With such a situation confronting not only this industry but every industry in the country, it is necessary that every manufacturer study the problem from his own individual angle and set his house in order to meet it. The most important duty is to obtain immediately a proper balancing of stocks so that continuance of operation may be carried out independently of material deliveries.

As a parts maker we have prepared to meet the requirements of our customers by laying in an ample stock of raw materials, and we will add to this as opportunity presents. We consider this to be our duty to our customers and believe that every parts maker serving the industry should also make such preparations. With raw materials in stock the parts maker is not taking any undue risks.

It is unwise, however, that manufacturing into finished product be carried on at any greater rate than the actual shipping specifications furnished by customers. Though it may impose a burden on workmen to be forced out of employment or be forced to go upon short time, it has been proven bad business in the depression period of the recent past to tie up capital in finished product for which there may not be any demand for months.

In view of the generally unsettled conditions in the country it is to be expected that the industry will confine itself to operations based upon actual sales requirements. There has been a general improvement in the financial condition of most companies during the year, and this strength should be conserved now when there is a possibility of a severe set-back due to transportation difficulties.

ELWOOD TRACTOR BUYS PLANT

MILWAUKEE, WIS., Sept. 18—The Elwood Tractor Co., Madison, Wis., manufacturer of tractors, engines, etc., has taken over the business of the Paris Mfg. & Engineering Co. of Paris, Ill., and is moving its entire works and headquarters to Paris. The Elwood company maintained an experimental and development shop in Madison about seven years and is now getting into quantity production, but found no suitable quarters there. H. A. Burd, general manager, and C. D. Elwood, chief engineer, will continue in charge of the Elwood business at Paris. A production schedule of 1000 Elwood tractors in 1923 is planned.

L-M Axle Acquires Jones Gear Plant

CLEVELAND, Sept. 18—The L-M Axle Co. has purchased the plant of the Jones Gear Co. for $500,000. The gear company went into bankruptcy some time ago, and the axle company has been producing its products in the building that it has just purchased, having leased it from the receiver.

The axle company obtained a plant that is fully equipped to make its products and will go into large production. The L-M double reduction axle is for trucks, and it was invented by Leo Malanowski, at one time chief engineer for the White Motor Co.

George B. Durell, treasurer of the American Fork and Hoe Co., is president and treasurer of the axle company; Warren H. Cowdery, president of the American Fork and Hoe Co., is chairman of the axle company's board of directors, and Attorney J. L. Vaughan is secretary.

CHICAGO SALES HEAVY

CHICAGO, Sept. 16—A report by R. G. Dun & Co. gives the number of new automobiles sold in Cook County, including Chicago, in the seven months ending July 31 as 28,590. It states that sales in May, June and July were about 5000 a month.

Fisher Body Plans Plant Expansion

Facilities Will Permit Chevrolet Production of 2000 Cars Daily

DETROIT, Sept. 16—Chevrolet Motor Co. will operate on a schedule approximating 2000 daily in 1923, this schedule being indicated by the completion of expansion plans by Fisher Body Co., which will permit it to make that number of Chevrolet bodies daily after Jan. 1. Three manufacturing plants will be given over entirely to Chevrolet, as will a large part of the Fisher Ohio Body Co. in Cleveland.

A general outline of the complete expansion program was given by W. A. Fisher at an "appreciation and acquaintance" dinner given by the Flint Chamber of Commerce to Fisher and General Motors officials, signalizing the start of operations on the Fisher plant at Flint. C. S. Mott, vice-president in charge of the advisory staff of General Motors, a resident of Flint, presided at the dinner, and A. G. Bishop, president of the chamber, was toastmaster.

The Flint Plant

The Fisher Chevrolet plant in Flint will have a capacity of 400 to 500 bodies daily and will employ 1000 men. It will adjoin the manufacturing plant of the Chevrolet company and will be connected by an overhead conveyer. Fisher said that this entry of the Fisher company into Flint would probably be augmented in the near future by the erection of a body plant to meet the added requirements of the Buick company.

In addition to the Flint plant, Fisher will have Chevrolet body manufacturing plants in Pontiac and St. Louis, in which cities it has taken over the O. J. Beaudette plant in the first instance, and the former General Motors plant in the second. In addition to these there will be body assembly plants in Buffalo, Cincinnati, Oakland, Cal., and Janesville, Wis. In the latter plants only body assembly work will be carried on. At the Cleveland factory a large part will be devoted exclusively to manufacture and assembly of Chevrolet work.

Other General Motors officials at the dinner were H. H. Bassett, president of the Buick Motor Car Co.; Albert Champion, president of the A. C. Spark Plug Co.; T. S. Merrill, secretary of General Motors Corp.; G. F. Lord, advertising director of Chevrolet; C. F. Barth and W. D. Douglas, of the Chevrolet manufacturing division at Flint, and H. J. Mallery, of Buick.

Chevrolet Starts Building

DETROIT, Sept. 18—The Chevrolet Motor Co. has purchased tracts of land in Buffalo and Cincinnati on which it will begin building operations at once in preparation for manufacturing soon after Jan. 1. These, with the existing manufacturing plants in Flint, St. Louis, Tarrytown, N. Y., Oakland and Fort Worth, will give it a daily production of over 2000.

The new manufacturing plants will provide buildings for the Fisher Body Co., which will be devoted solely to supplying bodies for Chevrolet cars. The Cincinnati property includes 16 acres and is located on B. & O. and P. C. C. and St. L. railroads. The Buffalo plant will be located on 29½ acres of property on Erie railroad.

300 Cars Daily at Cincinnati

Cincinnati will employ 1200 men on Chevrolet work and 900 men in the Fisher plant, and will have a production capacity of 300 cars daily. In the two plants there will be 350,000 feet of floor space. Buffalo will have 2000 men on Chevrolet work and 1800 in the Fisher factory, with a production capacity of 500 cars daily. In these plants there will be 600,000 feet of space.

W. S. Knudsen, vice-president in charge of operations of the Chevrolet company, said that with the completion of the new plant Chevrolet will be prepared to enter a production schedule of 2000 cars a day. At the present the capacity is about 1100 cars daily, this figure being the one at which the Chevrolet factories have operated since early summer.

Define Manufacturer for Tax Assessment

MILWAUKEE, WIS., Sept. 18—A. H. Wilkinson, collector of internal revenue, Milwaukee, has given an explanation of the section regarding assessments on automotive parts used in connection with repair and replacement work by garages and service shops to combat misunderstanding among some dealers and manufacturers. He says:

"Regarding repair work other than top and body work, a person who manufactures for sale separately parts and accessories, and who is also engaged in the repair business, will be held to be a manufacturer with respect to all such parts and accessories made and sold by him, regardless of whether used in repair work or not. A person who does not manufacture any parts or accessories for sale separately, but is engaged in doing a strictly repair business, and who makes only occasionally a part needed for an immediate repair job performed by him, is not a manufacturer, and is not required to pay any tax with respect to any such parts or accessories."

GETS FOREIGN HORN ORDER

MILWAUKEE, WIS., Sept. 18.—The Fulton Co. of Milwaukee, manufacturer of automotive equipment, has just received a large order for Aermore exhaust horns from a jobber in Osake, Japan. Several other sizable orders for miscellaneous equipment have been booked recently from Japan, China and other foreign countries. Domestic business is reported as very good and production schedules are steadily being extended to meet delivery specifications.

First Flint Car Ready for Debut

Production to Start at Long Island City and Flint by January—Rush Elizabeth Plant

NEW YORK, Sept. 18—The first showing of Durant's new Flint car will be given simultaneously in New York and Flint, probably this week. Production is expected to be started at the plant in Flint, Mich., by Jan. 1 and at the Long Island City plant possibly at an earlier date. Operations at the latter factory will depend upon the progress that is made on refitting the former Willys Corp. plant at Elizabeth, N. J., which Durant Motors, Inc., purchased and which it will use exclusively for the production of the Star and Durant.

These two cars are now being turned out at the Long Island City plant and no effort will be made to begin production on the Flint there until they have been removed to New Jersey. Work is being pushed rapidly on equipping and making rearrangements at the Elizabeth plant to meet the requirements for Star and Durant production with the result that removal may be effected by the middle of next month.

No schedule has been outlined for Flint car production, but the Long Island City plant has a capactiy of 100 cars daily and the first five units of the plant at Flint a capacity of 500 a day. By next spring it is thought that the two plants will be turning out from 400 to 500 cars.

The schedule for the Durant has been fixed at approximately 6000 for September, an increase over August output.

No complete plan of distribution of the Star has yet been made. As a starter the car is being given to Durant distributors in various cities who will act in the capacity of branches of the State company. This will establish a closer contact between distributor and factory. Star Motors, Inc., the selling organization, has companies in most of the States.

Farmers Show Great Interest in Tractor

CHICAGO, Sept. 15.—Increased interest by farmers in tractors was noted by Guy H. Hall, director of the National Institute of Progressive Farming, at the Minnesota and Wisconsin state fairs from which he recently returned.

The Minnesota fair was not as largely attended this year as in the past, Hall said, but the farmers who were there showed unusual interest in the tractor and other power farming exhibits. "The amusement section was practically deserted," Hall said, "while the men and boys from the rural sections were climbing all over the tractors and other machines."

The Wisconsin fair was largely attended and the tractor exhibit was one of the most popular, Hall said.

Maxwell-Chalmers Settlement Nears

Noteholders' Protective Committee Approves Plan for Exchange of Notes for Stock

NEW YORK, Sept. 17—Further steps in the adjustment of the affairs of the Chalmers Motor Co., by which it is expected that the Maxwell Motor Corp. will obtain title to the Chalmers company, were taken this week with the approval by the Noteholders' Protective Committee for the Chalmers first mortgage 6 per cent five-year gold notes of the plan under which the notes will be exchanged for stock in the Maxwell corporation. It is understood that a majority of the noteholders already have consented to the plan. Time for additional deposits of the Chalmers notes with the New York Trust Co., as depositary, expires Oct. 5.

Plan Note Exchange

The plan provides for the exchange of notes on the basis of ten shares of Maxwell Class A, ten shares of Maxwell Class B stock and $60 in cash for each $1,000 note, or the alternative of $860 in cash.

The Class A stock is of the par value of $100 and the Class B stock of no par value. Class A is entitled to non-cumulative preferred dividends and the rate of 8 per cent per annum and to participate equally with Class B stock in any year after 8 per cent has been paid on each class. Upon any liquidation of the corporate assets Class A stock is entitled to receive par in priority to Class B stock. Both classes have voting power.

It is also provided that, if necessary, non-dividend bearing scrip certificates will be delivered for fractional interests in a share of stock.

In its letter to the noteholders the committee which consists of Mortimer W. Buckner, chairman; Philemon Dickinson and Morton F. Stern points out that "depositors who do not accept the offer may, under the terms of the plan, find themselves entitled only to a distributive portion of the price of the Chalmers assets realized at judicial sale."

Committee Organized

Organization of the committee was effected early in April of this year immediately following the default in the payment of interest on the notes. These notes had been secured by a first mortgage executed by the Chalmers company to the Metropolitan Trust Co. of New York and aggregated $3,150,000. Under the provisions of the mortgage the principal was declared due on July 6.

During July the Fisk Rubber Co., a creditor, filed a complaint in the United States District Court for the eastern district of Michigan, southern division, and this was followed by the instituting of an action by the Metropolitan company asking for foreclosure of the mortgage. These two actions subsequently were consolidated. At about the time of the issue of the notes all of the properties of the Chalmers company were leased to Maxwell Motors. Various differences arose, however, and the lease was terminated on May 31, 1921. The property then reverted to the possession of the Chalmers company.

The plan that had been entered into between Maxwell and Chalmers provided for the deposit of stock for the Chalmers company but by the terms of that plan the notes were left undisturbed.

Maxwell holds a claim against Chalmers in excess of $3,500,000, offset by a disputed claim approximating $6,000,000.

To Sell Chalmers Property

The committee plan contemplates the sale of all the property of the Chalmers company, under a court decree, with its purchase by the committee acting for Maxwell Motors which will then reimburse it by the exchange of stock for the notes, on the terms agreed upon.

"In deciding the course to be recommended to the noteholders," the letter of the committee says, "the committee has considered that the lien of the mortgage is limited practically to fixed plant and does not cover good will, inventory, receivables or claims; that it is uncertain whether the mortgaged assets at forced sale will bring the amount due on the notes; and that a deficiency judgment must share pro rata with other claims, including those of Maxwell Motor Corp., against unmortgaged assets, the value of which is unknown and can be established, if to any extent, only after costly and lengthy litigation and investigation."

Will Keep Cadillac Force at Top Speed

DETROIT, Sept. 16—Following a convention of distributors and dealers this week at which fall and winter sales were discussed, President H. H. Rice of Cadillac Motor Car Co. has declared that factory operation will be continued through the winter at full force. He said:

> I believe that general business in spite of a few disturbances on the surface is decidedly on the upgrade. I not only believe that people will be able to get coal this winter but also manufacturing concerns will get enough coal to operate.
>
> Strikes in any essential line of business are bound to be settled after a short duration. These strikes are too vital to last long. The crops this year are good and I believe the farmer will obtain good prices for them. Factories that have been shut down are gradually opening.

Lynn McNaughton, general sales manager of the company, said business in the past twelve months has exceeded the business of any similar period both in number of cars and in total value.

WELDING SOCIETY TO MEET

CHICAGO, Sept. 15.—The fall meeting of the American Welding Society will be held here from Oct. 2 to 5. Various papers on welding will be presented.

Metropolitan Sales Show Slight Decline

Indications Are That an Upward Turn Will Bring Strong October Demand

NEW YORK, Sept. 15—Although August showed an appreciable falling off in car sales in the metropolitan territory, according to figures based on registration issued by Sherlock and Arnold, there is every indication that the sales curve has taken another turn upward and that September will show an improvement.

The falling off could hardly be characterized as a slump, although there were notable exceptions where some makes reached a point nearly fifty per cent lower than the peak months of April, May and June. However, balancing these in the total sales were others, particularly in the higher price class, whose August sales showed a distinct improvement over July and reached points within striking distance of the boom months.

Closed Cars Gain

September opened slowly following the downward trend of the market during the closing days of August and each day is showing an improvement. The upward trend is expected to gather momentum in October and develop into a strong selling market, especially for closed cars, during the fall and early winter months. The closed car show, scheduled for the latter part of this month, is expected to contribute some impetus.

With but a few exceptions the railroad situation has not affected New York to the extent of actually preventing deliveries. Delivery service between the factories and dealers has been considerably slowed up, however, and some dealers already are organized to make driveaways this fall if conditions do not improve.

Unless weather conditions are particularly unfavorable the fall promises to develop a fairly active used car market throughout the Metropolitan district.

The outlook for truck sales this fall is brighter than in many months but up to the present time there has been no acute upward turn. September truck sales were slightly better than August on the whole and inquiries indicate a stronger demand in October and November, especially in the light delivery car field.

BOSCH ANTICIPATES BIG FALL

SPRINGFIELD, MASS., Sept. 18.—The American Bosch Magneto Corporation is shaping its plans for a heavy fall business. A. H. Bartsch, general sales manager, reports the heaviest August business this year in the history of the concern and the largest single month's sales since March of last year.

Murry Rubber Will Succeed Empire Tire

Organization Which Operated Plant Under Receivership Will Continue Line

TRENTON, N. J., Sept. 18.—Steps have been taken for the organization under the laws of New Jersey of the Murray Rubber Co. as successor to the Empire Tire & Rubber Co., which was purchased at a receiver's sale last week by Campbell, Heath & Co., of New York, and their associates. The purchaser backed the reorganization plan which was offered the creditors by William M. Pepper and J. Cornell Murray.

C. Edward Murray, Jr., will be elected president and general manager of the Murray Rubber Co. The other officers will be: William M. Pepper, vice-president and treasurer; Harvey R. Nason, secretary; Ray H. Paddock, director of tire sales; Robert M. Stuart, director of mechanical sales; W. W. Sanders, factory manager; Albert N. Alexander, comptroller; H. Earl Berrien, assistant treasurer, and Norman S. Conover, assistant secretary.

The directors will include William H. Peck, president of the Third National Bank of Scranton; H. J. Angermeier, vice-president of the National Bank of Kentucky; W. D. Campbell, president of the Van Camp Packing Co.; W. M. Pepper, treasurer of Campbell, Heath & Co. and C. E. Murray, Jr.

This is the exact organization that ran the plant successfully during its receivership. It is also announced that there will be no change in the personnel of district managers.

The Empire products inclusive of tires and tubes will be continued as in the past and in addition the Murray products will be manufactured. The Murray Rubber Co. is simply a new corporate name, the products being continued as at present.

Mayo Approves Twin City for Ford Site

MINNEAPOLIS, MINN., Sept. 16—As the result of an o.k. on the proposed site of the Ford Motor Co. northwestern production center of Ford products at the high dam in the Mississippi River in the Twin Cities by William B. Mayo, chief engineer, a referendum of business organizations, business men and public officials of the two cities, is expected to settle the difficulty now existing as to the use of water power now going to waste. Mayo made a 100-mile radius inspection, including water power on the St. Croix river, a tributary of the Mississippi river. He was impressed with the water transportation facilities available and with the fact that the high dam power is idle, although $3,000,000 has been spent by the Government to advance the head of navigation to Minneapolis, by means of the high dam and a previously erected dam. He said the district may become a second Detroit.

Mayo said, among other things: "St. Paul and Minneapolis have abundant transportation facilities in the river, if they only recognize it. Mr. Ford must look ahead not only as to plans for production, but also for his distribution of finished product and the receipt of raw materials. Mr. Ford feels that water transportation must be used wherever in any way possible. The high dam site is apparently the first opportunity for the development of a situation where navigation as well as power can be brought into existence."

Permanent Assembly Plant for Antwerp

DETROIT, Sept. 19—Ford Motor Co. has purchased property in Antwerp upon which it will erect an assembly plant to take the place of the present temporary quarters in use during the past year. The Antwerp plant assembles Ford products for sale in Belgian and Holland markets.

The representative of the Ford company has taken up the proposal to locate a plant in Italy with the Italian Government and negotiations are now in progress.

Courier Motors Sets Production Program

SANDUSKY, OHIO, Sept. 18.—The Courier Motors Co., which under the name of the Arrows Motors Co. purchased the assets of the Maibohm Motors Co., plans to build 750 cars for the balance of this year and has a tentative schedule of from 3000 to 4000 for next year.

The company has a capitalization of 6000 shares of preferred stock divided as follows: 3500 shares, Class A, which were issued to the creditors in accordance with the pro rata amount of their claims against the Maibohm company as allowed by the courts and 2500 shares, Class B, approximately 700 shares of which have been sold for par and the balance held in the treasury for future sale. There are also 5000 shares, no par value, common stock which have been sold to the officers, directors and buyers of the 700 shares of Class B preferred.

It is reported that most of the old Maibohm distributors have continued with the new company, that others have been secured and that an aggressive dealer campaign is now under way. The old Maibohm has been considerably changed in everything except the lines of the car.

MOON REPORTS RECORD OUTPUT

ST. LOUIS, Sept. 15.—The Moon Motor Car Co. reports a record production of 1018 cars for August with indications pointing toward a higher market for September. The company has under construction an extension to its plant, half of which will be used for the factory maintenance division.

Assets of Midwest Engine Transferred

Receivership Ended When New Corporation Acquires Assets at Sale

INDIANAPOLIS, Sept. 16.—A deed transferring to the Midwest Engine Corp. all the assets of the old Midwest Engine Co., its plants, equipment and real estate holdings in Indianapolis and Anderson, Indiana, was filed in the recorder's office here by Frederick Van Nuys who has been receiver for the Midwest Engine Co. The sale of the assets was authorized July 11, by Judge Solon J. Carter under whose direction the receivership was conducted.

Coincident with the filing of the deed Blaine H. Miller, president, and H. W. Griffith, secretary of the Midwest Engine Corp., filed a mortgage deed of trust of all the property mentioned in the deed to the Irving National Bank of New York City as a part of the reorganization plan to secure the issuance of $3,000,000 worth of mortgage refunding bonds.

It is said that the filing of the deed and the mortgage was in keeping with the original plan of reorganization announced at the time of the sale of the property to the new corporation July 11. The price paid for the property was $312,000 subject to mortgage responsibilities said at that time to amount to about $1,750,000. The engine works of the company are located in this city while the pump plant is at Anderson, Ind.

Bingham Will Make Patent Truck Wheel

COLUMBUS, Ohio, Sept. 18.—The Bingham Manufacturing Co., chartered about eight months ago with an authorized capital of $100,000 has been organized by the election of H. N. Bingham, president; F. E. Kocher, vice-president, and G. P. Hinckle, secretary. The company has taken over a part of the plant formerly occupied by the Immel Co., where a patented tractor and truck wheel will be manufactured. The patent is controlled by the company and license arrangements have been completed whereby the tractor rights have been sold. The company will soon start the purchase of machinery for the plant which will be fitted up completely.

The wheel arrangement is along the order of a continuous chain in the nature of a caterpillar, but with a rubber tread. It is expected to get into production about October 15 at the latest.

EMPLOYMENT DECREASES

DETROIT, Sept. 18—A decrease of 2705 in total employment from last week's total of 175,099, is reported by the Employers' Association. In the corresponding week a year ago the total was 116,407.

Tommy Milton Wins Kansas City Race

Drives Leach Special — Sarles Killed When Car Crashes and Catches Fire

KANSAS CITY, MO., Sept. 18.—Tommy Milton, champion driver of the American Automobile Association and winner of the 1921 Indianapolis speed classic, driving an eight cylinder Leach Special, won the 300 mile automobile race held at Kansas City's new $500,000 speedway, Sunday, Sept. 17.

Milton's time was two hours, 46 minutes, 52 seconds. Harry Hartz, driving an eight cylinder Hartz Special, was second in the race, making the required 240 laps in two hours, 47 minutes, 50 seconds. Frank Elliott came out in third place with his eight cylinder Leach Special, doing the 300 miles in two hours, 49 minutes, 46 seconds. Ralph Mulford was fourth, driving a Duesenberg, straight eight special, Jimmy Murphy driving Bennett Hill's Miller special and I. P. Fetterman were next in order.

Roscoe Sarles, relief driver for Cliff Durant, was burned to death when his car caught fire after smashing through the railing of the track. The car hurdled 40 feet and smashed to the ground. His mechanician, C. V. Pickup, was injured dangerously.

Murphy Replaces Hill

Jimmy Murphy was forced to leave the track early when his car threw a tire and he collided with Joe Thomas, but he took Bennett Hill's place when Hill was taken from his car in the 135 lap too ill to continue the race. Peter De Paolos Jr. Special turned turtle and caught fire, dangerously injuring Paolo and his mechanician, Tony Guletta.

Frank Wagner, the veteran, officiated as starter. A crowd of over 60,000 attended the races which were postponed a day because of a heavy rain the day before.

Alena Steam Products Files Suit for $50,000

INDIANAPOLIS, Sept. 15—Officials of the Alena Steam Products Co. of this city, engaged in the construction and development of steam trucks and tractors, have filed a suit for $50,000 against Reece S. Allen of Wichita Falls, Texas, claiming breach of contract. It is claimed that on Feb. 20 Allen received in exchange for an extension of $100,000 credit an option on the common stock of the Alena Steam Products Co., equal to the amount of the loan. The executives are said to have been given the right to draw at will against the credit and to construct five steam trucks and five steam tractors.

Relying on Allen's guarantee, the officials claim they constructed machines at a cost of $30,000 and contracted for the construction of five others to cost $55,078. After these latter contracts were filled, Allen is said to have agreed to extend further credit for production. Later, the petition says, drafts presented against Allen were refused payment. Subsequently, the petition states, Allen refused to carry out the agreements. The net result, it is claimed, will jeopardize the business valued at $400,000 and threaten loss of contracts, patents and machinery.

The plant of the company, its equipment and other assets are said to be worth $400,000. Fred Hamilton is president; George Killman, vice-president, and John W. Cadle is secretary-treasurer of the concern.

Special Jewett Phaeton to Sell for $1,095

DETROIT,, Sept. 16.—A new special Jewett phaeton at $1,095 has been added to the line of the Paige Motor Car Co. It is mounted on the standard Jewett chassis. The body and hood are finished in deep moleskin gray. The color, besides being dustproof in character, brings out the straight lines of the body. A nickeled radiator shell and Tuarc disk wheels are fitted, the wheels being finished in the gray of the body with a touch of scarlet at the hubs and nickeled rims. Outside valve stems furnish wood wheel convenience.

Harmonizing with the gray of the body, the upholstery is a gray green Spanish leather, laid over deep sprung cushions. Standard black running gear and fenders are fitted.

New Headlight Laws for New York State

ALBANY, Sept. 16—Manufacturers of 60 of the 100 improved headlight lenses and anti-glare devices which have been approved at various times for use on automobiles in New York State have been cited to appear before the State Tax Commission in the Capitol, Sept. 26, and show cause why the authorization should not be revoked. The action has been taken under the new law, giving the Tax Commission new powers to remedy the glaring headlight abuse.

Coincident with the calling of the headlight hearing, the Tax Commission issued a complete set of regulations regarding lights on motor vehicles and anti-glare headlight devices.

Among the provisions in the new regulations for headlights are those that are given below:

All bulbs must be of 21 candle-power; there must be two white lights in front; both lenses must be alike and only approved lenses or other anti-glare devices may be used; all reflectors must be bright and free from rust and dents; when lighted by electricity the headlights must be sufficient to reveal objects at least 200 feet in front of the car, but must throw their light so as to avoid dangerous glare or dazzle. The 1922 specifications of the Illuminating Engineering Society have been accepted by the commission as the standard to be applied in testing anti-glare devices.

Equipment Makers Enrolling Members

No Thought of a Show But Desire Is for Organization Without Jobber Members

CHICAGO, Sept. 16—An outline of the plans for the expansion of the Association of Automotive Equipment Manufacturers was given at a meeting yesterday by George Fritz, who was recently elected general manager. It was announced that executive offices have been opened at 926 Consumers Building, Chicago.

Enrolment of new members is to be carried on aggressively for the next six months. Fritz said that in addition to the credit and trade information now supplied by the association, other services would be taken up.

Expansion Program

Several of the members discussed the ambitions of the association, which was started among Chicago equipment manufacturers, but now has enrollment in other sections. There are 78 members now and the goal is 150 or more in six months. Members stated that the association has grown out of a demand for an organization of manufacturers who, without other elements in the trade present, could discuss problems and activities exclusive to manufacturing businesses. They hoped for co-operation of other associations in the equipment field.

Some of the members belong to the Automotive Equipment Association, which includes manufacturers and jobbers on an equal active membership footing. The A. E. A. originally was a jobbers' association, which first accepted manufacturers as associate members.

At yesterday's meeting the resignation of Nelson H. Oliver was accepted, and Franklin Mayo was elected in his place.

Special Six Phaeton New Columbia Model

DETROIT, Sept. 18.—A new Columbia model known as the special six phaeton to retail at $1,095, f.o.b. Detroit, has been added to the line of this concern. This body is mounted on the standard Continental 115 in. wheelbase chassis incorporating the Continental 6-Y engine, Timken axle, Durston transmission gearset with Timken bearings, Stromberg carbureter, Borg & Beck clutch, Gemmer steering gear, Spicer universal and Auto-Lite electrical equipment.

Among the features of the special six are nickel-plated Harrison radiator with thermostatically controlled shutters, cowl ventilator, barrel head lamp as well as cowl lamps for parking, heavy weight crown fenders and cord tires. The body is of generous proportions, the rear seat being 46 in. wide and the upholstery is of real leather over deep coiled springs.

New Process Gear Sale Unconfirmed

Court Reserves Decision Claiming Warner Offer Not a Fair Price for Plant

ALBANY, N. Y., Sept. 16—Federal Judge Frank Cooper, at a special term of the United States District Court, today withheld approval of the sale of the New Process gear division of the Willys Corp. at Syracuse. In making the announcement that he had decided to reserve decision for the time being on the application for the confirmation of the sale, Judge Cooper indicated a belief that the price bid by T. W. Warner, president of the Warner Corp. of Muncie, Ind., and Toledo, was not large enough to constitute a fair price, asserting that efforts had been sought to effect the sale "during a period of industrial depression and under unfavorable conditions due to the coal and railroad strike."

Warner Offers $1,904,000

Warner, who was the highest bidder, had offered $1,904,000 for the plant.

The sale of the plant at this price was opposed by the two receivers for the company, Mayor George R. Lunn of Schenectady and former Assistant District Attorney F. E. Caffey of New York City. Caffey contended the plant is worth approximately $500,000 more than the sum offered by Warner.

Mayor Lunn argued that the plant is now doing a large volume of business, and that with the industrial controversies virtually settled the plant could make more money. He argued in favor of readvertising for bids. Caffey also joined in this argument, presenting figures apparently showing that the book value of the concern is $4,000,000 and that the volume of business since Dec. 8 last, when it went into the hands of receivers, has been $340,000.

Majority Favor Sale

Those favoring the sale of the plant to Warner far outnumbered the opponents. Henry S. Johnstone of New York, representing the bank auditors committee, urged the acceptance of the bid. Johnstone also represented the merchandise and construction creditors. H. F. Rindell of New York, representing 60 per cent of the preferred stockholders, also urged the acceptance of Warner's bid, as did J. W. Young of New York City, representing 80 per cent of the common stockholders.

George D. Welles of Toledo, who represented Warner, also advocated the confirmation of the sale.

DUTY PLANT SALE FAILS

ELGIN, ILL., Sept. 18—Elgin stockholders of the Duty Motor Truck Co. were advised that the deal with the American Steam Truck Co. of Chicago to take over the plant was off, at least temporarily.

The stockholders accuse the Association of Commerce of interference and declination to make an assignment of its interests in the land occupied by the plant of the Duty company. It will be necessary to borrow money to pay the Association of Commerce $7,800 for its interest in the land, and efforts to obtain this sum were without avail. The stockholders are not disposed to pay this sum from assessments, and, as a result, there is little likelihood of a transfer being made.

Gray Roadster First Showing This Month

DETROIT, Sept. 16.—Gray Motor Co. will produce the first of its roadsters this month, the price being fixed at $490, the same as the phaeton model. The company is now building 60 cars daily and will increase its production to 150 daily with the completion of its second manufacturing unit which will be ready in November.

The compartment in the rear has been made extra large and the rear deck is detachable so that a small commercial body may be attached when desired.

Packard Adds Two New Closed Models

DETROIT, Sept. 16—Two new closed models have been added to the single six line by the Packard Motor Car Co., a five-passenger sedan limousine at $3,325 and a five-passenger coupe at $3,350. Both are mounted on the 126 in. wheelbase chassis. With these the company has six closed models in the single-six line, four on the short chassis and two on the 133 in.

The new sedan limousine is similar to the seven-passenger sedan limousine, already included in the line, except for the shorter chassis. It is convertible from owner to chauffeur-driven by the raising or lowering of a glass partition between the front and rear compartment. The front compartment is upholstered in black leather and the rear in gray broadcloth.

The new coupe seats three on its rear seat, which extends across the width of the car. It is fitted with a large trunk containing two suit cases and a hat box. Nickel bar fenders are fastened on the rear panel of the body.

TRUCK DEMAND INCREASES

SPRINGFIELD, OHIO, Sept. 18—An average of fifty motor trucks a month are being turned out now at the plant of the Kelly-Springfield Motor Truck Co. Production for the last month was 54 trucks. Reports from distributors show that there is an increasing demand for trucks, representatives of the company say.

Fifty men were added to the sheet metal department during the past week at the plant of the International Harvester Co. Supt. C. H. Smart says the Springfield plant is keeping up with its schedule of 25 speed trucks per day, and shipments are going forward.

Peru Sees Better Year in Prospect

Improvement in General Business Conditions Will Increase Automotive Sales

LIMA, PERU, Aug. 30, 1922 (By Mail).—During August automotive dealers in Peru have been more encouraged by prospects of better future business than satisfied with the month's business actually done. There is always a lull in the automotive line in August, following a burst of business in July, preparatory to celebrating the national holidays on the last days of that month.

There are several indications that general business will be better during the next twelve months than it has been during the last eighteen. And this means that automotive business will be better, for automobile, truck and tractor agents are quick to take advantage of any general improvement in commercial conditions and push for trade.

Among these symptoms of better business conditions may be noted:

1. A trade balance favorable to Peru during the first half of 1922, as opposed to an unfavorable trade balance during first half of 1921.

2. A consequent improvement in exchange; the Peruvian pound having risen to $4.04, and above from a past low level of $3.18.

3. Improved price for Peru's articles of export: cotton, wool, copper.

4. Apparent political and industrial quiet.

5. Government active in promoting irrigation projects and cattle improvements.

6. Better steamship service, the Grace Line having restored one of the boats taken off at the time of the crisis, an act that shows that better times have come.

Better Roads to Help Sales

Of direct aid to automobile and truck agents is a faint sentiment developing in favor of better roads. One of the local papers has opened an automobile page, published twice a week, devoted to good roads, cheaper fuel, and a better understanding of the mechanism and use of the automobile. A page of this kind may be made of great help to automotive agents.

Old automotive stock has been pretty well cleaned out and what is still left will go before Jan. 1, 1923. So American manufacturers should look forward to a better trade in Peru during the coming year.

RECORD SUMMER SALES

CHICAGO, Sept. 18.—After the greatest summer season in its history the automobile accessory business in Chicago is getting back to its accustomed stride. Dealers in accessories everywhere report sales in the past six months as beyond every expectation and preparation.

Men of the Industry and What They Are Doing

McDonald Given New Duty

Stewart McDonald, president of the Moon Motor Car Co., has been elected a director of the St. Louis Chamber of Commerce.

Rickenbacker and Bride Sail

Major Edward V. Rickenbacker, vice-president of the Rickenbacker Motor Co., sailed for Europe on Saturday, to be gone two months. While abroad he will make a tour of the battle fields. Accompanying him is his bride, who was formerly Mrs. Adelaide Durant.

Barker Back from Europe

A. E. Barker, vice-president of the Maxwell Motor Corp., has returned from Europe after making a survey of automotive trade conditions there. Barker states that until recovery is more complete, England will not provide a large market for American cars. In France conditions are prohibitive, the same being true in a large measure of the rest of Europe. English business, big and little, Barker states, is fighting vigorously for a return to better conditions.

Lon R. Smith Resigns

Lon R. Smith has tendered his resignation as director of sales and advertising of the Midwest Engine Co. in order to take up other duties, the nature of which has not been disclosed. His plans will not be definitely announced until later and in the meanwhile he will remain in charge of Midwest sales.

McCain Leaves Colonial

George L. McCain, who has for the past year been associated with Colonial Motors, Ltd., of Windsor, Ont., and who has held the office of vice-president and chief engineer of this company, has resigned to take up other engineering work. McCain has for a number of years been associated with the Packard Motor Car Co. as well as the Lincoln, and during the war period was very active in airplane and airplane motor engineering.

New Departure Advances Curry

John J. Curry has been appointed mechanical superintendent of plant D of the New Departure Manufacturing Co. located at Meriden, Conn. Plant D is the newest unit erected by the company. Curry is a graduate of Pratt Institute and has been employed in the tool division of the New Departure plant at New Britain, Conn., for a number of years.

Golden Accepts New Post

William A. Golden, a former post office inspector, has been added to the staff of the National Vigilance Committee of the Associated Advertising Clubs of the World, and will devote his energies especially to fraudulent and deceptive advertising practices in the motor car, tire, battery and motor accessory fields. Golden was formerly associated with the Goodyear Tire & Rubber Co.

Miles Back From Orient

Bruce J. Miles has returned to the United States after spending two years in the Orient as Far Eastern representative for the General Motors Export Co. During the year and a half that he made his headquarters in Manila, Miles served as president of the Philippines Automobile Dealers Association, a position he relinquished when General Motors moved its office to Shanghai. Miles expects to take a few months vacation before going abroad again.

Baskerville Goes to Maxwell

Dean E. Baskerville, body designer and engineer, has been added to the staff of the Maxwell Motor Corp. For the last six years Baskerville has been body engineer of Dodge Brothers. Prior to that association, he was connected with various manufacturers in the automotive industry, among them being the Packard Motor Car Co. of Pittsburgh, the Highland Body Co. of Cincinnati and the Troy Manufacturing Co. of Troy. With these organizations he was engaged in both designing and construction work. His affiliation with the national organization will permit E. W. Goodwin, consulting engineer of the Maxwell body division, to give his entire time to creative work in design.

Wright Makes Transfer

Walter F. Wright, southern division manager of the Willys-Overland Co., has taken over the Cleveland branch of Willys-Overland and will operate it under his own name as a distributor. Wright has been with Willys-Overland for ten years, serving alternately as factory representative, special representative, branch manager, division manager and assistant to the vice-president in charge of sales.

Anderson Joins Stutz

Harry W. Anderson, recently with the Duesenberg Motor Co., has taken charge of the eastern business of the Stutz Motor Car Co.

FRANLIN'S BIGGEST YEAR

SYRACUSE, Sept. 19—Production of Franklin cars will continue at full speed during the fall and winter months. It is announced by H. H. Franklin, president of the H. H. Franklin Manufacturing Co., that production in 1923 will aggregate 14,000 cars, the largest in the company's history.

Gernandt Oil Engine Developed by Bendix

Ready to Be Offered Industry—Will License It to Manufacturers and Others

CHICAGO, Sept. 20—Vincent Bendix, president of the Bendix Engineering Works of this city and also the inventor of the Eclipse-Bendix drive, announces that his company has developed the Gernandt oil engine, designed for use in automobiles, motor boats and locomotives, to the point where it can be offered to the industry. The Bendix company will not manufacture the engine but license its manufacture by others.

Bendix, Waldo G. Gernandt and Charles Bathrick have been working on this engine for the past five years and the design is protected by a series of basic patents.

Burns All Fuels

The Gernandt oil engine burns crude oil, distillate and kerosene, injected in a spray. It also burns gasoline without alteration or adjustments, it is claimed. The fuel is injected as a spray by means of the Gernandt patented system of super-compressing products of combustion, which contain no oxygen and therefore heats but does not pre-ignite the fuel while forcing it through a spraying slot. The spraying and injection is directly into the combustion chamber. Greatly increased mileage from the fuel is claimed for this device.

The Gernandt engine is designed in both two and four cycle types and also for air as well as water cooling. It is a full Diesel.

Gernandt Long in the Industry

Gernandt, whose idea it is, has long been identified with the automobile industry. In 1904 he assisted in the construction of the first four-cylinder block engine built in America. In 1908 he designed a single-sleeve engine and in 1909 he designed a double opposed motor truck engine. He was an engine designer for Packard in 1913 and from 1914 to 1917 he was associated with Cadillac in the redesigning of its eight-cylinder engine. He became associated with Bendix in 1917, since which time he has been developing the oil engine.

CONFERENCE POSTPONED

WASHINGTON, Sept. 19—Because of the inability of delegates to attend the Highway Conference, which was to have been held at Seaview, N. J., on September 14, 15 and 16, the Conference has been indefinitely postponed, it was announced to-day by Pike Johnson, of the N. A. C. C. Conference Committee.

Coal Distribution Blocked by Order

Northern Shipment Held Up by L. & N.—Government Removes Priorities

DETROIT, Sept. 20—The coal situation with Detroit automobile manufacturers was discussed at a meeting of the fuel committee of the Detroit Board of Commerce yesterday. Ernest Leibold, executive secretary to Henry Ford said at this meeting that the Louisville & Nashville Railroad, which taps the Ford mines in Eastern Kentucky, was using government service order number 23 which prevents the distribution of coal to certain industries as a subterfuge and declared that this order should be cancelled.

Henry Shearer, general manager of the Michigan Central Railroad, said the service on the L. & N. was inefficient and that as soon as this railroad started moving coal into Cincinnati other railroads to the north would get coal in Detroit. He said the Michigan Central and other lines were prepared to meet the emergency. Coal now being offered the Ford company by certain mining companies was not the proper grade, Leibold said, and for that reason the company has declined to make contracts.

Edison Has 15 Days' Supply

Alex Dow, president and general manager of the Detroit Edison Co., told the committee that the Edison company had only 15 days' fuel supply and this would be but 11 days' supply in winter weather. He declared it was dangerous for the company to be forced to go into the winter with less than a 30 day supply.

There was no indication at the meeting that other manufacturing plants might be compelled to follow the Ford closing move, but on the contrary more confidence was expressed in the ability to maintain operations. Difficulty is being experienced in getting steel as well as coal due to the general railroad situation but only temporary tie-ups have resulted from this cause.

Factory operation on a day to day basis as suggested by the United States Chamber of Commerce was declared impractical by John L. Lovett, general manager of the Michigan Manufacturers Association.

Coal operators were declared by Lovett to be using the government service order as a reason for disregarding contracts with manufacturers and coal dealers, and coal that they otherwise would be sending out on contract for $2.20 to $2.50 a ton at the mines, they are selling through brokers at $6 at the mines.

Priorities Removed

WASHINGTON, Sept. 20—Through the action yesterday of the Interstate Commerce Commission in connection with its new service order number 25, petroleum and its products are added to the list of commodities given preferred movement, effective at 12 o'clock to-night.

The order means that there will be a freer transportation movement of gasoline. A number of other commodities also were added to the preference list. The order is based upon the provision that the railroads can move all traffic as required and at the same time it abolishes the priorities created for the benefit of preferred users of coal, except when such preferences may be asked by the commission itself.

Gasoline Added

The adding of gasoline and other products of petroleum to the preferred list has been the source of gratification to automotive interests. The action of the commission is further evidence of the easier transportation and coal situation due to settlement of the strikes.

Ford Closing Only Affects Few Plants

PONTIAC, MICH., Sept. 18—Closing of Ford plants in Michigan because of the fuel situation will not be reflected in any local plants, except those working entirely on Ford parts. The Standard Auto Parts plant, making Ford springs, is practically shut down. The Fisher Body Co., making Ford bodies, has laid off 250 men, but has begun work on Chevrolet bodies, turning out about 300 daily.

The Oakland Motor Car Co. reports no worries over fuel, but some stringency in the transportation situation. No shut-down is anticipated, according to the general manager, George H. Hannum.

The Wilson Foundry & Machine Co. will not have to close, says General Manager Wilson. Fuel for the entire winter is available, and orders justify expectation of running steadily.

W. L. Day, general manager of General Motor Truck Co., says that while strike conditions have affected the market for trucks somewhat, there is no likelihood now of a shut-down.

Michigan Drop Forge Co. will continue day and night shifts in spite of handling Ford orders.

Durant Reports Many Canadian Star Orders

TORONTO, ONT., Sept. 18—Durant Motors of Canada reports progress in the development of manufacture and sale of its product in this country.

The company will produce the Star upon completion of the large new plant at Leaside, near Toronto. Over 1000 advance sales of the Star have already been made and the company expects to sell 18,000 in Canada in the first year. The touring model is priced at $650, basis Walkerville.

The company also manufactures the four-cylinder Durant car at Leaside. The six-cylinder Durant is imported from the factory at Muncie, Ind., and will continue to be supplied to the Canadian trade from that source until other arrangements can be made.

Industry Must Get Needed Coal Supply

Conference Urges Campaign to Expedite Coal Shipments and Control Measures

WASHINGTON, Sept. 18—Need for keeping the automobile industry supplied with coal was emphasized in the discussion in the House to-day, of the conference report authorizing selection of a fuel administrator.

Congressman Chalmers of Ohio stated that the Blue Diamond Mines Co. of eastern Kentucky had defaulted their contract with the Willys-Overland Company for the delivery of 5,000 tons of coal per month at $1.85 per ton at the mines, claiming that on account of lack of railroad transportation facilities the coal operators are not able to carry out their agreement.

Skips Overland Factory

Chalmers charged that with the consent, or at least with the knowledge of the coal distributor, this company is shipping coal to Toledo, right past the Willys-Overland factory to be loaded on Lake boats at higher prices. He insisted that the livelihood of about 11,000 men employed by the automobile company was jeopardized by this default.

Henry Ford's drastic action in connection with the coal shortage has had a salutary effect upon legislators and has materially expedited the passage of control measures.

Relief to the industries which are not on the preferred list was indicated by the opinion at the conference held here recently that mobility will be given to movement with less opportunity for speculation, if the priorities to special uses which have been necessary prior to the re-opening of the union mines should be relaxed and priority parallel with agricultural produce should be given to the movement of all coal without discrimination as to consignees.

Purposes of Campaigns

The three major purposes for which the conference voted to organize voluntary campaigns, were as follows:

1. To induce manufacturers, utility corporations, and buyers generally, not to purchase coal beyond their day-to-day needs until the flow of coal becomes more normal.

2. To persuade holders of coal contracts not to call for delivery on those contracts past their day-to-day needs. It was considered that about one-half of the coal in the country is under contract at normal prices and that a relaxation in the demand for this coal to the minimum daily requirements would allow an increase in supply to the general public.

3. To expedite the movement of coal in every possible way.

The co-operation of the responsible coal operators in these matters will be sought.

Ford Secures Coal; Will Reopen Plants

Price Changes and New Models Indefinite, Depending on Future Conditions

(*Continued from page* 586)

situation in all parts of the country and having no direct bearing on the closing.

Many other car factories in the district are operating on a greatly reduced schedule. This is especially true of the cars in the low price field, with cars in the middle class field also affected. Many workmen are being laid off in plants and there is considerable unemployment in the industry for the first time since March.

No Cars on Hand

The Ford Company went into the period of closing with its branches and dealers absolutely devoid of any stock of cars and with sales aggregating to the last day of operation all the cars that it was possible for the factory to produce for the past four months. Retail sales were on an equal footing with production running higher than 5000 daily. This condition, the factory points out, made it impossible for any stock of cars to be collected.

In connection with insistent reports that there would be a reduction in prices before operations were resumed it was said that with sales taxing the capacity of the factory, the question of a change in price has not entered into consideration and until satisfactory arrangements are completed for the purchase of coal, steel and other materials, no thought of change will be entertained. If a reduction comes later it will be determined upon business conditions and the terms upon which the company arranges for its materials.

New Closed Car

Whether new models will be introduced with the reopening of the factory, depends upon the progress the experimental department makes with the work upon which it is steadily engaged and upon which it is continuing during the closing of manufacturing operations. One of the models which the company has considerably advanced to this time is a new closed car which will be more commodious than the former model of its type.

The plans of the company for an assembly branch at Tampico, Mexico, are in abeyance because business conditions in Mexico now do not warrant such a plant for the present. The requirements of Mexican dealers will continue to be handled from the Houston, Tex., plant and the plant nearing completion in New Orleans. This latter plant will also supply countries in which there are no assembly branches.

The Philadelphia branch will continue to handle most of the foreign shipments to countries not supplied by foreign branches, property holdings of this branch being recently increased by the purchase of land in southern New Jersey.

Charlotte Plant Operating

CHARLOTTE, N. C., Sept. 18—The Charlotte branch of the Ford Motor Company expects to continue in operation for thirty days, the plant having enough material on hand and in sight to keep in operation for that length of time. The New Jersey branch of the factory will continue to ship material here until Sept. 20. The local plant is now turning out 50 finished cars a day but plans to return to 30 a day, its normal capacity.

Buffalo Plant Closed

BUFFALO, Sept. 16—The local assembly plant of the Ford Motor Co. closed to-day. It will reopen Tuesday to dispose of a shipment of cars and will then close again for an indefinite period.

Cambridge Plant Still Open

CAMBRIDGE, MASS., Sept. 19—The local Ford plant has not yet been closed, but the shutdown may come by the end of the week. If it does, the period of the shutdown will be indefinite.

Kearney Not Closed

KEARNEY, N. J., Sept. 16.—The Ford Motor Co. assembly plant here will not close for the present, according to notices posted to-day instructing 2800 men employed to report for duty as usual on Monday.

Chicago Supplies Replacements

CHICAGO, Sept. 18.—The Chicago branch of the Ford Motor Co. which has been producing 250 cars a day closed Saturday. About 700 employees were laid off. The parts department of the branch will remain open and will supply replacement parts to dealers as long as the supply lasts.

Service Closes Week Later

DETROIT, Sept. 18—The service department at the Ford factory is continuing to work this week, but will close Saturday like the rest of the plant indefinitely. Ample replacement parts will have been made and distributed by the week-end, it was said, to supply all Ford cars for the period that the factory will be down.

Highway Conference to Announce Program

WASHINGTON, Sept. 19—Details of the program of the Second National Conference on the Educational Aspects of Highway Transport will be announced within two weeks, the Highway Educational Board of the Conference have announced.

Invitations are being extended to all leading professors of Civil Engineering in the United States to attend. Announcement of the program is being held pending definite acceptance of those invited to attend. The conference will be held on October 26, 27 and 28 here in Washington.

All Prices Reduced by Willys-Overland

Overland Cut from $20 to $55—Willys-Knight from $80 to $140

TOLEDO, Sept. 18—The Willys-Overland Co. has announced price reductions effective to-day on all models of Willys Knight and Overland cars, which bring the lists down to the lowest ever quoted. The reductions on the Willys Knight cars range from $80 to $140 and on the Overland from $20 to $55. The new prices include many improvements. The revised list is as follows:

Willys Knight		
5-passenger	Old Price	New Price
Phaeton	$1,375	$1,235
Roadster	1,350	1,235
Coupe	1,875	1,795
Sedan	2,095	1,950
Chassis	1,150	1,125
7-passenger		
Sedan	2,295	2,195
Overland		
Phaeton	$550	$525
Roadster	550	525
Coupe	850	795
Sedan	895	875
Chassis	450	425

John N. Willys, president of the company, is enthusiastic over business conditions and prospects. He said:

We are rapidly settling many of the fundamental problems which have held business back over here and conditions are improving daily. I cannot see anything but a period of increasing prosperity ahead. We are not worrying about coal.

Roamer Makes Price Cut on All Models

KALAMAZOO, MICH., Sept. 20—The Roamer Motor Car Co. announces reductions on its full line of open and closed models ranging from $100 to $500, effective immediately. The new schedule, which is as follows, brings the price of the Roamer lower than it has ever been:

Model 6-54-E	Old Price	New Price
4-pass. Phaeton	$2,585	$2,485
4-pass. Sport	2,750	2,750
7-pass. Phaeton	2,785	2,685
Roadster	2,850	2,685
3-pass. Cabriolet	3,585	3.285
5-pass. Coupe	3,850	3,585
5-pass. Sedan	3,850	3,585
7-pass. Suburban Sedan	4,150	3,950
5-pass. Brougham	4,500	4,000
Special 5-pass. Sedan	(new)	4,250
Model 4-75-E		
4-pass. Phaeton	3,585	3 495
4-pass. Sport	3,750	3,650
4-pass. Sport Sedan	4,650	4.650
2-pass. Speedster	3,985	3,785

Although the price of the 4 passenger sport Model 6-54-E has not been changed, it is announced that extra equipment has been added.

The company is building a special phaeton with wooden wheels, priced at $2,285.

Tariff Bill Will Help Export Trade

Seven Provisions of Great Importance to the Automotive Industry

WASHINGTON, Sept. 19—By a vote of 43 to 28, the Senate late this afternoon adopted the conference report on the Tariff bill, following twenty months of hearings and debate. Its passage is certain, as the President has announced that he is prepared to sign the measure as soon as it reaches him.

Seven provisions in the bill are considered of paramount interest to the automotive industry, affecting to a lesser or greater extent the foreign business of the automobile export business and the industry at home as well.

Flat Duty of 25 Per Cent

Summed up, these seven provisions are:

(1) The measure provides a flat 25 per cent duty on all automotive equipment, vehicles, parts and accessories.

(2) It carries a 90 per cent ad valorem duty on all automobiles re-imported.

(3) A duty of 5 cents per pound on aluminum in the crude, and nine cents per pound on aluminum in coils, sheets, etc.

(4) A duty on ball bearings of 10 cents per pound and 45 per cent ad valorem.

(5) Crude oil to remain on the free list.

(6) Administrative provision authorizing the President to increase or decrease tariff rates to a maximum of 50 per cent in the case of countries discriminating against the United States.

(7) The enlarging of powers for the Tariff Commission and giving that body authority to make factual investigations for the President and Congress in determining the justification of any rate considered unreasonable.

Under the terms of the last two mentioned provisions, both of which are, of course, administrative, the President in substance is given the authority to "render justice where justice is due," and to set up retaliatory tariffs against states and countries which discriminate against this country—even to the extent of placing an embargo against certain items of manufacture.

Could Set Up Embargo

As an example, under present conditions there is an embargo in Germany against the importation of automobiles into that country by the United States. Under the authority given him by the new bill, the President could set up similar embargo against Germany, or if that country should happen not to be a manufacturer of automobiles, the embargo could be extended to any other item as a retaliatory measure because of Germany's embargo on automobiles from this country.

In discussing this phase of the new tariff measure, Pyke Johnson, executive secretary for the National Automobile Chamber of Commerce, declared that it was one of the most salient points in the bill.

He said:

> The automobile industry, as well as many other industries, after spending years of time and a great deal of money have had it happen to them, to wake up and find that one of their chief export markets for certain commodities had been cut off because of high tariffs. Under the provisions of the new bill, this cannot happen, without equally disastrous results to the country levying the excessive tariff or embargo.

The duty of 10 cents per pound and 45 per cent ad valorem on ball bearings is a conference compromise. The bill as it passed the House provided for a 35 per cent ad valorem duty, while the Senate measure carried a 55 per cent levy.

While authority is given the President to make reciprocal changes in the measure, he is not authorized to change dutiable articles to the free list, or vice versa, or specific rates to ad valorem rates.

Drake Sees Stimulus

NEW YORK, Sept. 20—J. Walter Drake, chairman of the foreign trade committee of the N. A. C. C., in speaking of the new tariff legislation, says:

> The newly agreed upon export features of the tariff bill, assuring equality of treatment in non-manufacturing as well as industrial countries, will stimulate American automotive trade abroad.
>
> Under the general export feature the newly lowered automobile rate of 25 per cent, if conditions warranted, could be increased by one-half, bringing it up to a maximum of 37½ per cent. If some manufacturing country were unwilling to allow a duty as low as 25 per cent on American vehicles in return for an equally low rate on its automobiles brought into the United States, steps could be taken to have a higher rate up to 37½ per cent apply.
>
> In the extension of our trade with non-industrial countries the general export feature of the tariff will also prove helpful. Finland is one of these countries. At the present time American manufacturers are at a handicap there, because French exporters pay a duty of 10 per cent compared with 40 per cent assessed on United States automobiles. With means now being provided, such a discrimination would be discouraged either by concessionary or higher duties on paper and other products imported into the United States from Finland.

De Palma Inspecting Pan Motor's Factory

MINNEAPOLIS, MINN., Sept. 20—Ralph De Palma, automobile racer, has been inspecting the plant of the Pan Motor Co. at St. Cloud, Minn., in the interest of a company which considers purchasing it for the purpose of manufacturing cars there. It is stated that he will return in a month with business associates to make another study of the plant. De Palma was accompanied during his inspection by W. E. Merrill of the Lafayette Minnesota Motor Co. of Minneapolis.

Receivers Named for Comet Plant

Court Action to Prevent Foreclosure—Hope to Put Concern on Feet

BLOOMINGTON, ILL., Sept. 20—Receivers have been named for the Comet Automobile Co. by Judge Baldwin, to avert foreclosure proceedings against the property, in behalf of the Citizens National Bank and the Farmers State Bank & Trust Co. of Decatur.

The Millikin Trust Co. and Roy W. Jones of the Comet company have been named receivers at the request of the company, and with the consent of the bankers. They were instructed by the court to make an appraisal of the property before further action is taken by the receivers.

The action is the result of financial difficulties which the company has had in recent months and was taken by agreement in the hope that a receivership might conserve the assets of the concern.

Trusteeship Created

In October, 1920, the company was in need of funds, and the board authorized an issue of $250,000 8 per cent bonds which were delivered to the Farmers Bank in the form of a first mortgage. It was unable to sell the bonds, and on December 15, 1920, an agreement was entered into between the board and the banks, creating a trusteeship for the company to advance money from time to time. This money to be secured by a trustee. All of the money that has been advanced by J. D. Johnson, trustee, under the terms of that agreement has been repaid.

This year the company contracted for $400,000 worth of material for the manufacture of cars, but financial difficulties forced it to cancel all of its orders, and the plant has now practically ceased operations.

President George W. Jagers looks upon the action as a most favorable way out of the financial difficulties and believes that it will be beneficial to stockholders and creditors alike. "The company," he said, "has been trying to refinance its affairs for some time, but has been unable to do so, and the hope is that the court, through receivers, will be able to put the company on a sound financial basis again."

Not to Wind Up Affairs

The company's property is worth $400,000, which is sufficient to take care of all claims in the event that the property is liquidated to settle the affairs of the concern. It is not planned, however, to wind up the affairs, but it is hoped rather that the concern may be financed and given another opportunity to proceed with the manufacture of cars. It has a well equipped factory building for that purpose.

Conference Assists All Tire Industry

Tire Dealer and Rubber Associations Meet—Co-operate to Abolish Abuses

CLEVELAND, Sept. 18—R. F. Valentine, president of the National Tire Dealers Association, to-day made public through an official statement what had been accomplished at the meeting of a special committee of the tire dealers' association and the ruling board of the Rubber Association in New York City on Aug. 9.

Horace De Lisser, acting president of the Rubber Association, is quoted as saying: "This conference has been productive of incalculable good to both the manufacturer and the dealer, and it has seldom been my privilege to sit in a conference holding more interest, and where there was such evidence of clear understanding.

Re-equipment Sales Considered

In the matter of adjustments, the rubber association assured the committee that all available means were being used to acquaint the public more thoroughly with the new policy, which calls for the elimination of mileage guarantees. The rubber men also agreed to endeavor to induce certain manufacturers giving such guarantees to discontinue the practice.

Re-equipment sales were considered, and on this subject the manufacturers pledged the use of every possible precaution to prevent the purchase of larger quantities than actual equipment requirements and that resale of equipment stocks through car agencies will be discontinued.

A discussion of the topic, "The Car Manufacturer," developed that a few companies are now supplying five tires on equipment orders, instead of the regular four tires. Future contracts will, in all probability, be based on four tires, leaving the fifth to the dealer to be supplied.

Certain Accounts Stopped

The national and commercial accounts have been a problem to the tire dealer, and when this subject was reached, one of the largest tire manufacturers announced that he had discontinued such accounts, with the exception of a few that run until the end of the year. The dealer representatives argued that there was no justification for such accounts, and the rubber men agreed that this matter would be given the closest consideration by the sales organization.

The dealers' committee asked that the publication of all price lists other than the consumer lists be eliminated. They stated it would save money for the manufacturer and eliminate misunderstandings for the dealers. It was the concensus of opinion that if manufacturers found it necessary to issue lists other than consumer lists, their distribution should be carefully controlled.

Regarding the production of more than one line or grade of tires in one plant, the dealers questioned the practice of any company producing more than one line and grade and marketing the products under separate agreements and contracts. This brought the statement from some manufacturers that in the future, or just as soon as practicable, their products would be offered through one channel and the same policy would apply on all lines.

Several manufacturers reported that dealer practices would come in for consideration and close scrutiny, and that the flagrant abuses indulged in and practised by a great many dealers would not be tolerated. Other companies reported that they already were enforcing many needed restrictions. The dealers promised every co-operation possible in the correction of these abuses and demoralizing practices indulged in by some dealers.

Makers Still Feel Tire Price Upset

CHICAGO, Sept. 15—Tire manufacturers speaking at the monthly meeting here yesterday of the Midwest Rubber Manufacturers' Association declared that eight out of 10 of the small tire manufacturers are selling tires for less than the cost of production. It was the opinion of the speakers that probably half of the eighty per cent do not know that their selling price is below the cost of production because they are not able to figure manufacturing cost.

The price situation was said to be seriously affecting the tire makers in the Midwest group, but some hope of improvement was seen in the business trend. It was pointed out that most of the manufacturers have discontinued the shipment of tires on consignment and are now requiring cash on delivery.

The tire trade is greatly hurt, it was said, by the frequent failures of tire manufacturers with the result that in the liquidation process car loads of tires are dumped on the market at a fraction of the production cost. One manufacturer went so far as to declare that that there are no longer any legitimate retail tire dealers. "The 'gyps' are the only ones who can make money enough to stay in the business," he said.

It was decided to hold the November meeting of the association in St. Louis.

CONVENTION DATE SET

CHICAGO, Sept. 20—The Hardware Association will hold its annual convention at Atlantic City from Oct. 17 to 20. The motor accessories meeting will be held on Oct. 16 and 17. During the week a show will be staged at the Ambassador Hotel where the conventions will also be held. It is expected that the accessories meeting will be especially well attended for the reason that this year the Automotive Equipment Association has closed its doors to all but its members.

Will Settle Milk Transport Project

Producers' Committee May Adopt Automotive Equipment for Milk Transportation

WASHINGTON, Sept. 19—The use of automotive transportation by the Nation Milk Producers Federation will be taken up in November, when the Executive Committee of that association meets early in the month.

For more than three months the association has had under advisement the advantages of automotive transportation of their milk products over rail transportation. Because of excessive freight rates (all milk carrying a passenger freight rate), the Federation is seeking the establishment of its own milk transports, if it can be done economically and satisfactorily.

Data on the subject, submitted to the Federation by the Truck Committee of the N. A. C. C. will be placed before the Executive Committee at its coming meeting, which will be held either in Utica, New York or Boston.

Says Trucks "Shake" Milk

Preliminary consideration of the milk producers' trucking problem was taken up last week in a meeting in Philadelphia. No definite decision, however, was made as to the establishment of milk transports. Charles W. Holtman, executive secretary of the National Federation, said:

> The outstanding feature of the Philadelphia meeting was the development of the fact that milk shippers find that their product is shaken up too much when transported by truck and the belief was expressed that milk and milk products did not arrive in the city in as good a condition as when shipped by rail.

Whether or not this "shaking up" was of such proportion or under such conditions as to prejudice the use of trucks and would not be more than offset in the freight saving, Holtman stated that he was not prepared to say. He stated that:

> We are giving the matter serious consideration and it is to be hoped that we can definitely make some decision at the November meeting which will lead to the establishment of automotive transports, at least in sections where they are favorable and thus relieve our membership from the millstone of freight rates which at the present time is consuming all the profits of our members.

SPICER AT CAPACITY

PLAINFIELD, N. J., Sept. 20 — Charles A. Dana, president of the Spicer Manufacturing Corp., states that the plants of the company are working at capacity. Orders for 1923 delivery, it is stated, are already being received in good volume. No trouble is experienced from the fuel situation, as the company is well supplied with coal.

FINANCIAL NOTES

Hendee Manufacturing Co. has declared a regular quarterly dividend of $1.75 on the preferred stock payable Oct. 2 to stock of record Sept. 23. The company for the new fiscal year has laid out a schedule for 20,000 motorcycles as compared with a production of 8,500 last year. The solution of the national unemployment problem has been a big contributing factor in the increased demand. Of the 20,000 machines about 8,000 have been ordered for foreign delivery.

American LaFrance Fire Engine Co., Inc., has declared the regular quarterly dividend of 2½ per cent on the common stock payable Nov. 15 to stock of record Nov. 1 and a dividend of 1¾ per cent on the preferred stock payable Oct. 2 to stock of record Sept. 25.

Keystone Tire & Rubber Co. will offer common stock to holders at about $7.50 a share. The corporation has authorized a common issue of 5,000,000 of which 3,035,000 are outstanding, the balance being in the treasury.

Saxon Motor Corp.'s recently authorized 200,000 shares of common stock and 200,000 previously outstanding has been underwritten and will be offered to stockholders, the proceeds to supply working capital.

Auburn Automobile Co. has declared the regular quarterly dividend of 1¾ per cent on the preferred and $1 per share on the common stocks payable Oct. 1 to stock of record Sept. 20.

Hudson Motor Car Corp. has declared the regular quarterly dividend of 50 cents a share on the capital stock payable Oct. 5 to stockholders of record Sept. 25.

Yellow Cab Manufacturing Co. of Chicago has distributed $246,922 to employees as profit sharing bonuses from net earnings for the first half of this year.

Hupp Motor Co. has declared the regular quarterly dividend of $1.75 on the preferred stock payable Oct. 1 to stock of record Sept. 20.

Velie Motors Corp. has declared the regular quarterly dividend of 1¾ per cent on first preferred, payable Oct. 2 to stock of record Sept. 15.

Nash Motors Co. has declared a quarterly dividend of $1.75 on the outstanding preferred stock Nov. 1 to holders of record Oct. 20.

G. M. C. Has 48,554 Common Shareholders

NEW YORK, Sept. 19—General Motors Corp. had at the end of August 48,554 common shareholders. There were 41,144 common stockholders owning 100 shares or less while only 7,410 own more than 100 shares. Stockholders owning from one to ten shares number 14,774; eleven to 20, 7,460; 21 to 30, 5,315; 31 to 40, 2,094; 41 to 50, 4,036 and 51 to 60, 1,404.

JORGENSON REORGANIZING

WAUPACA, WIS., Sept. 18—The Jorgenson Mfg. Co. of Waupaca, Wis., manufacturing priming devices and other automotive equipment, brass castings, etc., which recently was declared bankrupt, will be reorganized immediately and the business continued. A group of stockholders have acquired the resources for $18,000 in cash and assumption of obligations of $10,000. Lack of adequate working capital after the enlargement of the plant was effected caused the proceedings in bankruptcy to be instituted. Waupaca business men, it is stated, have come forward with sufficient new capital to rehabilitate the industry.

Packard Report Shows Large Net Earnings

NEW YORK, Sept. 20—The annual report of the Packard Motor Car Co. for the year ended Aug. 31, 1922, will show that after setting aside adequate reserves the net earnings will be more than $1,000,000. If no reduction in inventory is called for the company's net earnings for the period may reach $1,500,000. In a statement issued preliminary to the annual report, the company says:

This showing does not reflect the true operating condition of the company at the present time, for it was not until May, the last month of the third quarter, that the company began to receive benefit from the sales of its new single six car and from products manufactured from materials at current low prices.

Net earnings at present are running in excess of $500,000 monthly and there is no indication of slackening of business. The company is now on a production basis of about 2000 cars monthly and is planning a considerable increase in production.

Hearings on Gasoline Situation Postponed

WASHINGTON, Sept. 19—The subcommittee of the Senate Investigation Committee on Manufactures, which is investigating the gasoline situation, will postpone further hearings until the reconvening of the new session of Congress in December, it has been announced by Senator LaFollette, Chairman of the Committee.

Further hearings are being postponed until a sufficient number of replies to questionnaires sent out have been received and digested, thus allowing the committee to get a line on subsequent procedure. Gilbert E. Roe, attorney for the sub-committee, who is conducting the investigation, states that replies are coming daily.

WILLS RUMORS DENIED

DETROIT, Sept. 20—Denial was again made to-day of the report that Henry Ford will take over C. H. Wills & Co. and that C. Harold Wills, its president, will become general manager of the Ford plant when it reopens. It is stated that the Wills company is in an excellent position, and that there is no basis for the rumor of a consolidation.

ASSOCIATION MOVES

NEW YORK, Sept. 20—The Motor and Accessory Manufacturers Association announces the removal of its office to the Fisk Building, 250 West 57th Street, at Broadway.

BANK CREDITS

Written exclusively for AUTOMOTIVE INDUSTRIES *by the Guaranty Trust Co., second largest bank in America.*

The strikes, which have rendered the business outlook uncertain for the last several months, are virtually past, and business generally is expected to feel soon the economic improvement which this will effect. Much, however, will depend upon transportation facilities. While considerable traffic congestion on the railways is expected by some observers, there is good reason for thinking that it may not be so serious as anticipated.

Unemployment in the country has become practically normal. About this time last year it was estimated that approximately 5,500,000 workers were out of employment. To-day it is estimated that only 1,500,000 are seeking work, while another million and a half are on part-time work. Reports from all parts of the country point to labor shortages in certain districts and trades.

According to the Association of Railway Executives, 195,142 cars of coal were loaded during the week ending September 16. Of this total, 175,326 cars were loaded with bituminous coal and 19,816 with anthracite. Coal production last week amounted to approximately 10,633,000 tons, of which 9,650,000 tons consisted of bituminous coal and 983,000 anthracite, based on these statistics.

High Prices Predicted

As the coal strike, in both the bituminous and the anthracite fields, has been settled on the basis of the former wage scales and as the wages of employees in the steel industry have been increased, we may expect, even after the fuel shortage has been overcome, the continuance of a high level of prices for coal, iron and steel products for some time.

Nevertheless, in view of the declines which have been taking place in other commodities, notably certain agricultural products which have been protected by the Emergency Tariff Act for more than a year, it is doubtful whether such a level can be maintained for any great length of time. This is especially true of the iron and steel industry, in which the larger part of the purchasing orders are placed only when buyers are convinced that prices are reasonably low.

WHITE CITY FOR OVERFLOW

LONDON, Sept. 8 (By Mail).—Due to the fact that extensions to Olympia will not be completed in time for the annual automobile show in November, it has been decided to use the accommodation available at the White City to supplement that at Olympia.

As was the practice put into force last year the Society of Motor Manufacturers and Traders has specified that the retail prices of chassis and of cars must be declared by noon on Monday, Oct. 16. No change in prices will be permitted after that date or during the exhibition.

INDUSTRIAL NOTES

L. H. Gilmer Co., Tacony, manufacturer of automotive equipment, is producing 20,000 fan belts every twenty-four hours, according to Ludwell H. Gilmer, president. This department is operating at two-thirds of capacity, while other departments are running twenty-four hours a day. The plant is shipping approximately 150,000 fan belts and 1,000,000 feet of brake bands a month to the Ford Motor Co. The company has approved plans and is about to award a contract for the erection of a new power plant and a storage house at a cost of approximately $200,000.

Walworth Realty Co., a subsidiary of the Walworth Manufacturing Co. of Boston, has awarded a contract for the construction of a warehouse, pipe shop and garage in Long Island City. The main building will contain the offices, city sales department, shipping room, and space for the storage of fittings and materials. The pipe storage building is to be 60 x 214 feet.

P. J. Janssen, Ltd., exporter of automotive products with offices in New York City, Singapore and Bandoeng, Java, has opened offices in Amsterdam to handle the business in Holland, Belgium and Scandinavian countries of American automotive manufacturers.

Springfield Commercial Body Co., Inc., has been formed in Springfield, Mass., to manufacture, repair and deal in automobile bodies. Charles B. Ring is president and L. Philip Smith is treasurer of the concern, which has an authorized capitalization of $200,000.

Racine (Wis.) Metal Stamping Co. has changed its corporate title to Racine Screw Works, to better designate the present nature of its principal business. Albert O. Falkenrath is president, and Jerome J. Ritter, secretary.

Holbrook Co., manufacturer of automobile bodies, announces plans to double its present capacity at the Hudson, N. Y. plant. The company now employs 120 men. An addition to its present plant to cost $100,000 will be erected.

Mueller Electric Co. has completed its new building at 1583 East 31st Street, Cleveland, which will permit it to expand its activities in the manufacture of electric specialties.

No Settlement Reached on Pan-American Claims

DECATUR, ILL., Sept. 18—Claims against the Pan-American Motors Corp. amounting to more than $100,000 have been objected to by the receivers of the defunct concern, and threatened litigation may long delay a settlement of its affairs.

The total amount claimed is $212,855, and more than half will be objected to. The real estate of the corporation has not yet been sold, as conditions have not been right to dispose of them, except at a great sacrifice. There was a time when it appeared as if ten cents would be realized upon the dollar, but it seems likely now that nothing will be left for the stockholders.

SAMPSON ASSUMES PRESIDENCY

TORONTO, ONT., Sept. 16—W. T. Sampson was elected president of the Automotive Industries of Canada in succession to R. S. McLaughlin, president of General Motors of Canada, Ltd., etc., at the annual convention in Toronto Tuesday—the largest in the history of the A. I. C.

T. A. Russell, president of Willys-Overland, Ltd., etc., was elected vice-president, and the board of directors was re-elected, W. R. Campbell, vice-president and general manager of the Ford Motor Car Co. of Canada, Ltd., filling the chair left vacant by the death of the late Gordon McGregor.

Sampson is vice-president and general manager of the Gananogue Spring and Axle Co., Ltd.

Bureau of Standards Advances Tire Tests

WASHINGTON, Sept. 16—Endurance tests conducted by the Bureau of Standards with 15 tires show consistent results.

The mileages obtained on 30 x 3½ fabric tires have ranged from 1000 to 4000 miles. A direct current motor has been installed so that the machine may be run at night as well as during the day, thus shortening the time necessary for a complete test.

Several more tests on the power losses in tires have been completed, and some of this work is being conducted in cooperation with the automotive laboratory of the bureau, which has been carrying out road tests on complete cars.

One tire manufacturer has requested a series of dynamometer tests on tires of several different constructions, and it has been agreed to carry out this work, as the results will be of interest in connection with the general power loss investigations.

Durant Plant Will Make 3000 Bodies Next Month

NEW YORK, Sept. 20—Following the announcement of the determination of Durant to build bodies for the Durant four and the Star for the eastern territory in the Elizabeth plant, the company states that 3000 of these bodies will be built there during the month of October so as to be ready for assembly work on Nov. 1. At the present time there are 165 men on the Elizabeth payroll, but it is hoped to increase this to 3000 by March 1.

BUYS CANADIAN SITE

TORONTO, ONT., Sept. 18—The Ford Motor Co. has just purchased fifteen acres of land from the Grand Trunk Railway on the eastern border of the city for $175,000, and will erect thereon a one-story car-assembling plant, having 150,000 feet of floor space.

This is the first property in Toronto or its vicinity sold by the Grand Trunk for more than forty years. This particular property has been owned by the railway for 36 years.

METAL MARKETS

Activity of the sort that would furnish a key to the attitude of buyers toward the higher price levels that pass as quotations in the steel market is utterly lacking. Transactions are all for immediate shipment and whatever prices apply to these are irrelevant in so far as concerns the major market for the reason that the prices which they carry include a premium for early shipment. A somewhat better pace in production is being gradually attained but the dent being made into the backlog of orders is not sufficient so far to cause producers to come out into the open and actively compete with one another for new business. Some producers have let it be understood that they will carry enough business over into the fourth quarter to enable them to continue operating at the present rate up to November, even though no new business of consequence should be forthcoming in the meantime.

While some of these estimates of unfilled tonnage on order books are obviously more optimistic than accurate, they are not injurious to the producers' cause. Conditions are such that just now the most energetic quest after steel orders for shipment in November and December would be love's labor lost. The only result of such activity would be to weaken the psychological effect of the widely advertised advance in steel production costs and selling prices. From their point of view producers are pursuing the only logical course in sitting back, taking whatever orders for rush shipment which come their way at fancy prices, and permitting the demand for deferred deliveries to develop without displaying eagerness for orders which would be playing into buyers' hands. There are those who say that with the shrinkage of the steel mills' backlog of orders during the year's last quarter and the seasonal contraction in demand prices will gradually shed some of their adipose which these observers claim should be looked upon as nothing more than premium on immediate deliveries. This view leaves out of consideration the actual enhancement of production costs and the general uncertainty of the entire industrial situation. He indeed would be a brave man who at this time would say whether steel prices, or for that matter prices of any commodity, will be higher or lower three months hence than they are now. It would be very gratifying to flash the "buy now" signal at this time if developments over the next three months were to vindicate such counsel.

Pig Iron.—Automotive foundries are buying from hand to mouth, if at all. Production is increasing, but it will be some time before anywhere near normal conditions are restored.

Aluminum.—Some importers are holding aluminum at virtually the same prices as those quoted by the domestic producer, but they are not making any sales at these prices. Once the duty of 5c. on ingots and 9c. on sheets becomes effective, the market's attention will center on the price program of the domestic producer. An early price advance by that interest would enable holders in the outside market to liquidate at a profit. The longer such an advance is held in abeyance, the greater will be the number of tired holders. Some consumers are protected by contracts over the remainer of the year.

Copper.—The market is steady with domestic consumers more interested.

Calendar

SHOWS

Sept. 23-30—New York, Closed Car Show, Grand Central Palace.

Oct. 7-14—New York, Electrical and Industrial Exposition, Grand Central Palace.

Oct. 21-28—Washington, D. C., Annual Closed Car Salon, Convention Hall, under the auspices of the Washington Automotive Trade Association.

Nov. 13-18 — Chicago, Annual Show and Meeting of the Automotive Equipment Association.

Dec. 3-9—New York, Eighteenth Annual Automobile Salon, Commodore Hotel.

Jan. 6-13—New York, National Automobile Show, Grand Central Palace, under auspices of National Automobile Chamber of Commerce.

Jan. 8-13 — New York Body Builders Show, Twelfth Regiment Armory, under the auspices of the Automobile Body Builders Association.

Jan. 27-Feb. 3—Chicago, Annual Automobile Salon.

Jan. 27 - Feb. 3 — Chicago, National Automobile Show, under auspices of National Automobile Chamber of Commerce, Coliseum and First Regiment Armory.

FOREIGN SHOWS

Sept. 1922 — Rio de Janeiro, Brazil, Automobile Exhibits in Connection with the Brazilian Centenary Associação Automobilista Brazileria.

Oct. 4-15 — Paris, Automobile Show, Grand Palais.

Nov. 3-11 — London (Olympia), Automobile Show.

Nov. 9 - 19 — Buenos Aires, Argentina, Annual Exhibition, Sociedad Rural Argentina.

Nov. 29-Dec. 4—London (Olympia), Cycle and Motorcycle Show. British Cycle Motors, The Tower, Warwick Road, Coventry.

November—Buenos Aires, Argentina. Annual Exhibition, Automovil Club Argentino.

Jan. 13-24—Brussels, Sixteenth International Automobile and Cycle Exposition, Palais du Conquantenaire.

CONVENTIONS

Sept. 18-23, 1922 — Rome, Italy, Second Annual Meeting of the International Chamber of Commerce.

Oct. 2-7—Detroit, Fourth International Steel Exposition and Convention of the American Society for Steel Treating and the American Drop Forging Institute, General Motors Building.

Oct. 7-14—Detroit, Second National Aero Congress and National Airplane Races.

Oct. 9-11—Chicago, Annual Convention of the American Gear Manufacturers Association.

Oct. 18-20—Chicago, National Association of Farm Equipment Manufacturers, Congress Hotel.

Oct. 26-28—Washington, Second National Conference for the Study of Highway Engineering and Highway Transport Education.

S. A. E. MEETINGS

Sept. 22—New England Section, Engineers Club, Boston, Starting and Lighting Equipment, Louis Ehrlich.

Sept. 29—Detroit Section, Lubrication, A. A. Bull.

Oct. 6 — Aberdeen Proving Ground, Md.

Oct. 26-27 — Detroit, General Motors Building.

Jan. 9-12—New York, Annual Meeting.

USL Effects Economies Under Miniger Control

NIAGARA FALLS, N. Y., Sept. 20—A financial statement issued by the U. S. Light & Heat Corp. shows that the interests headed by C. O. Miniger, which have been in control since Feb., 1921, have effected such economies in operation and developed so much business that the affairs of the company are in creditable shape at the present time. Administrative and selling expense for June, 1922, showed a reduction of approximately 24 per cent over June, 1921, and June, 1921, showed a reduction of approximately 27 per cent over June, 1920.

Profits Satisfactory

Miniger reports that for the first seven months of this year the corporation has been on the right side of the ledger, with the profits very satisfactory to the officers of the company. Important new contracts have been entered into for supplying initial battery equipments on Maxwell, Gray, Star, Columbia, Elgin, Stevens-Duryea and several others, in addition to those the company had last year.

Train lighting equipment orders have been obtained from Boston & Maine, Pennsylvania, Santa Fe, Wabash, Norfolk & Western, Chesapeake & Ohio and other roads.

FORD SEEKS HARDWOOD SUPPLY

MILWAUKEE, WIS., Sept. 18—That Henry Ford and son are in the market for 60,000,000 feet of hardwood logs to supply the immense sawmills, body plant and other woodworking shops established in the last two years at Iron Mountain, Mich., was the authoritative statement made at the annual convention of the Wisconsin and Upper Michigan Loggers Association, held in Milwaukee. This is in addition to the log supply from camps operated directly by the Ford interests. The material wanted consists of birch, maple and elm, with some hickory, walnut and hemlock. The requirements appear as probably the largest of any single concern so far as Wisconsin and Upper Peninsula hardwoods are concerned.

Hermann Chosen to Head New Tire Machine Co.

ST. MARYS, OHIO, Sept. 19—The Hermann Tire Building Machine Co. of Columbus, which produced and marketed certain lines of tire building equipment, has been sold to W. H. Hermann, who has also acquired the former plant of the A. R. McDonald Co., of this place. The latter plant will be equipped with machinery for the manufacture of casing and tube making tools.

The reorganization of the company has been brought about by the election of W. H. Hermann, president and treasurer; F. Stanley Crooks, vice-president; E. H. Brocker, secretary, and O. E. Larsen, plant manager.

DEMAND MIRRORS ON TRUCKS

WASHINGTON, Sept. 13—A uniform law, in the interest of safety, requiring mirrors on motor trucks is being sought by the American Automobile Association. A survey of the existing automobile mirror laws had been made by the Association and submitted to Secretary Hoover of the Department of Commerce with the recommendation that he use his office to bring about a uniform state law.

RESTRICTING RUBBER

NEW YORK, Sept. 14—Advices from London are to the affect that the British Rubber Growers Association has endorsed the recommendation of the Government's restriction of production in all British possessions.

California August Sales at High Mark

SAN FRANCISCO, Sept. 16—California automobile dealers had next to the best month of their history during August, 1922, though they did not reach the number of sales made in June of this year, when they smashed all records by selling 14,180 cars. August registrations showed sales of passenger cars totalling 13,893, which is 287 cars short of the June record, but enough to indicate that the sales curve is again rising, since the August volume of sales exceeds that of July by 882 cars. There is more than a possibility that September sales will equal, or even surpass, the June high-water mark.

Aggregate sales for the month of August, 1922, were 4398 cars more than for August, 1921, a gain over the same month as last year of 46 per cent. Southern California keeps its lead over northern California in number of sales, 7515 for the south, and 6378 for the north. Sales for the past August in the south were 2131 more than in August, 1921, a gain of 40 per cent; while northern California sold 2267 more cars in the month this year than last, a gain of 55 per cent.

BIG ACCESSORY SALES PREDICTED

ATLANTA, GA., Sept. 18—Tire and accessory jobbers in Atlanta covering the Southeastern territory advise that practically all wholesalers in the larger cities of the district are now carrying bigger stocks than they have at any time within the past three years. This is due to the fact, they say, that indications promise an unusually large demand during the next six or eight months. This business is expected to reach the high water mark in the history of the automotive industry in the Atlanta section during this period.